ZS-D50

SERVICE MANUAL

Ver 1.0 1999.01

AEP Model
UK Model
Tourist Model

TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	MF-ZSD50
CD Section	Model Name Using Similar Mechanism	ZS-M7
	MD Mechanism Type	CDM-2411AAA
	Optical Pick-up Type	DAX-11A

SPECIFICATIONS

CD player Section

System Compact disc digital audio system

Laser diode properties
- Material: GaAlAs
- Wave length: 780 nm
- Emission duration : Continuous
- Laser output : Less than 44.6 μW
- (This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Spindle speed
- 200 r / min (rpm) to 500 r / min (rpm) (CLV)

Number of channels
- 2

Frequency response
- 20 - 20,000 Hz +1 / –1 dB

Wow and flutter
- Below measurable limit

Radio section

Frequency range

FM	87.5 - 108 MHz
MW	531 - 1,602 kHz
LW	153 - 279 kHz

IF FM : 10.7 MHz
MW / LW : 450 kHz

Aerials FM : Telescopic aerial
MW / LW : Built-in ferrite bar aerial

Cassette-corder Section

Recording System
- 4-track 2 channel stereo

Fast winding time
- Approx. 130 s (sec.) with Sony cassette C-60

Frequency response
- TYPE I (normal) : 50 - 15,000 Hz

General

Speaker
- Full range : 8 cm ($3\ ^1/_4$ in.) dia., 3 ohms, cone type x 2

Input
- LINE IN jack (stereo minijack)
- Minimum input level 250 mV

Outputs
- Headphones jack (stereo minijack)
  - For 16 - 68 ohms impedance headphones
- LINE OUT jack (stereo minijack)
  - Rated output level 250 mV at load impedance 47 kilohms
- OPTICAL DIGITAL OUT (CD) (optical output connector)
  - Wavelength : 630 - 690 nm

Maximum power outputs
- 4.5 W + 4.5 W

– Continued on page 2 –

PERSONAL AUDIO SYSTEM

MICROFILM

SONY®

Power requirements

For personal audio system :
230V AC, 50 Hz
12 V DC, 8 R20 (size D) batteries

For memory back-up :
6 V DC, 4 R6 (size AA) batteries

For remote commander :
3 V DC, 2 R6 (size AA) batteries

Power consumption

AC 27 W

Battery life

For personal audio system

FM recording
Sony R20P : approx. 6 h
Sony alkaline LR20 : approx. 12 h
Tape playback
Sony R20P : approx. 3 h
Sony alkaline LR20 : approx. 6 h
CD playback
Sony R20P : approx. 1.5 h
Sony alkaline LR20 : approx. 3h

Dimensions (incl. projecting parts)

Approx. 435 x 223 x 160 mm (w / h / d)
(17 1/4 x 8 7/8 x 6 1/8 inches)

Mass (incl. batteries)

approx. 4.3 kg (9 lb. 7 oz)

Supplied accessories

AC power cord (1)
Remote commander (1)
Plug adaptor (1) (UK)

Design and specifications are subject to change without notice.

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SECTION 1
SERVICE NOTE

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

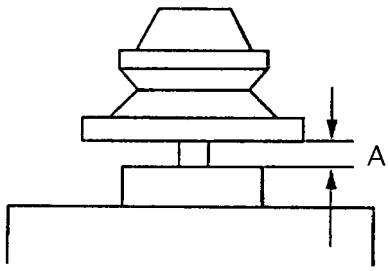
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Close the lid for CD.
2. Press CD ►II button.
3. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
   Objective lens moves up and down once for the focus search.

CAUTION DURING WHEN MOUNTING THE PULLEY FOR THE LOADING MOTOR

Make the following adjustment when mounting the loading motor (part number : 1-698-999-11) and motor pulley (part number : 2-627-174-01) of the CD section.

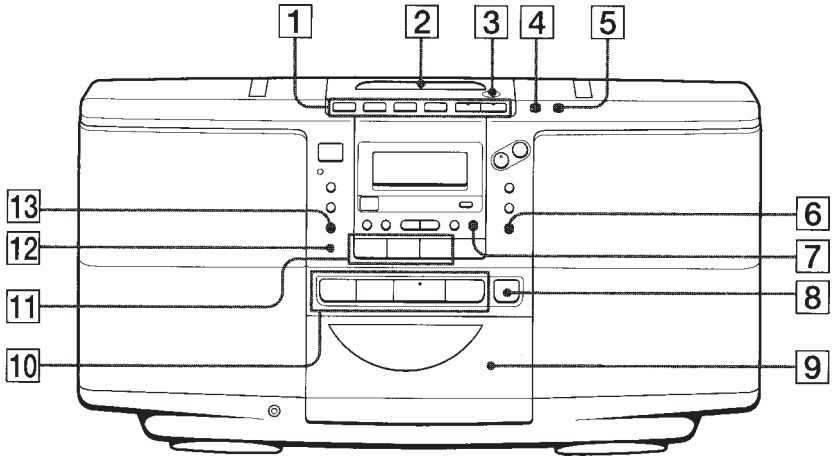


Specification : A = 0.9 to 1.1mm

SECTION 2
GENERAL

LOCATION AND FUNCTION OF CONTROLS

FRONT PANEL : CD/RADIO/TAPE section



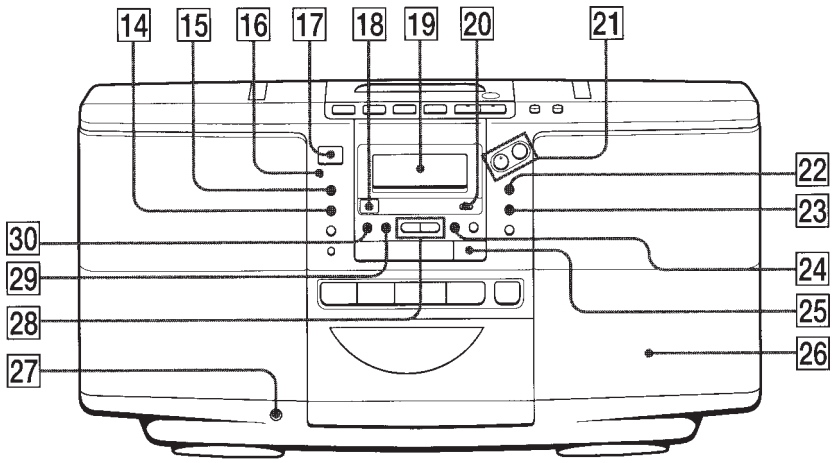
1 Tape operation buttons
- ●/❚❚ (REC/REC PAUSE)
- ◄◄, ►► (FF/REW, AMS)
- ■ (STOP)
- ◄, ► (PLAY)

2 Cassette lid
3 ⏏ PUSH OPEN/CLOSE
4 DIR MODE button
5 COUNTER RESET button
6 EDIT button
7 CANCEL button
8 ⏏ CD OPEN/CLOSE button
9 CD tray
10 CD operation buttons
- ⏮, ⏭ (AMS/SEARCH)
- ⏯ (PLAY/PAUSE)
- ■ (STOP)

11 Radio operation buttons
- RADIO BAND
- PRESET +, –

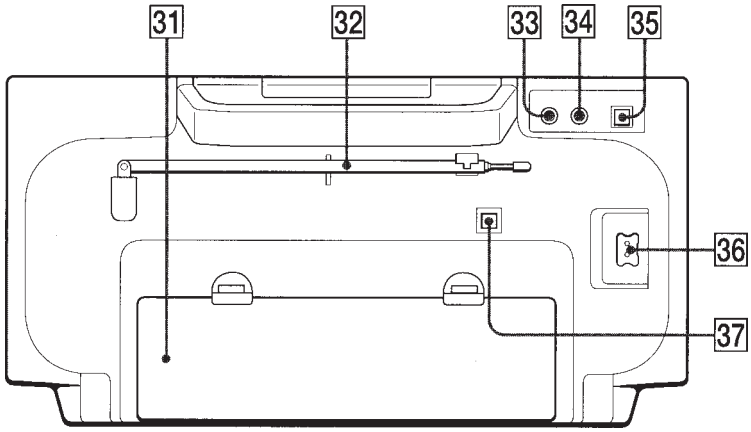
12 AUTO PRESET button
13 MODE MONO/ST ISS button

FRONT PANEL: TIMER/COM section



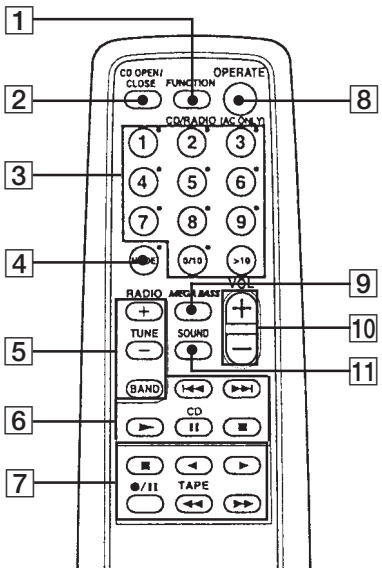
14 STANDBY button
15 SLEEP button
16 OPR/BATT indicator
17 OPERATE button
18 Remote control receiver
19 Display window
20 DISPLAY button
21 VOL +, –
22 SOUND button
23 MEGA BASS button
24 ENTER/MEMORY CHECK button
25 MD(LINE) button
26 Speaker
27 🎧 (Headphones) jack (stereo mini jack)
28 TUNING TIME SET +, – button
29 TIMER button
30 CLOCK button

REAR PANEL



31 Battery compartment
32 FM telescopic antenna
33 LINE IN jack
34 LINE OUT jack
35 OPTICAL DIGITAL OUT(CD) jack
36 AC IN ~ jack
37 OPTICAL DIGITAL OUT(CD) jack cover socket

Remote commander



1 FUNCTION button
Each time you pressed, the function changes in the order CD – Tape – Radio – Line – CD ···
2 ⏏ CD OPEN/CLOSE button
3 Number buttons
4 MODE button
5 Radio operation buttons
TUNE +, – button
BAND
6 CD operation buttons
⏮, ⏭ (AMS/SEARCH)
► (PLAY)
II (PAUSE)
■ (STOP)
7 Tape operation buttons
■ (STOP)
◄, ► (PLAY)
●/II (REC/REC PAUSE)
◄◄, ►► (FF/REW, AMS)
8 OPERATE button (AC only)
Active only when you use the set with AC power source.
9 MEGA BASS button
10 VOL +, – button
11 SOUND button

SECTION 3
DISASSEMBLY

● The equipment can be removed using the following procedure.

< MAIN BLOCK SECTION >

- Set
  - Cabinet, Rear → Inlet board, Power board → Battery (R) board, Battery (L) board
  - Cabinet sub ASSY, Front
    - Cabinet (Upper) ASSY → Switch (1) board → Mechanism deck
    - Line board
    - Tuner board
    - CD block ASSY
      - Headphone board → Switch (2) board, LCD board, Lamp board
      - Main board → CD/System board
      - CD block section

< MECHANISM DECK SECTION >

Mechanism deck → TC RF board, Head relay board, Belt (FR/BR), Motor (M691)

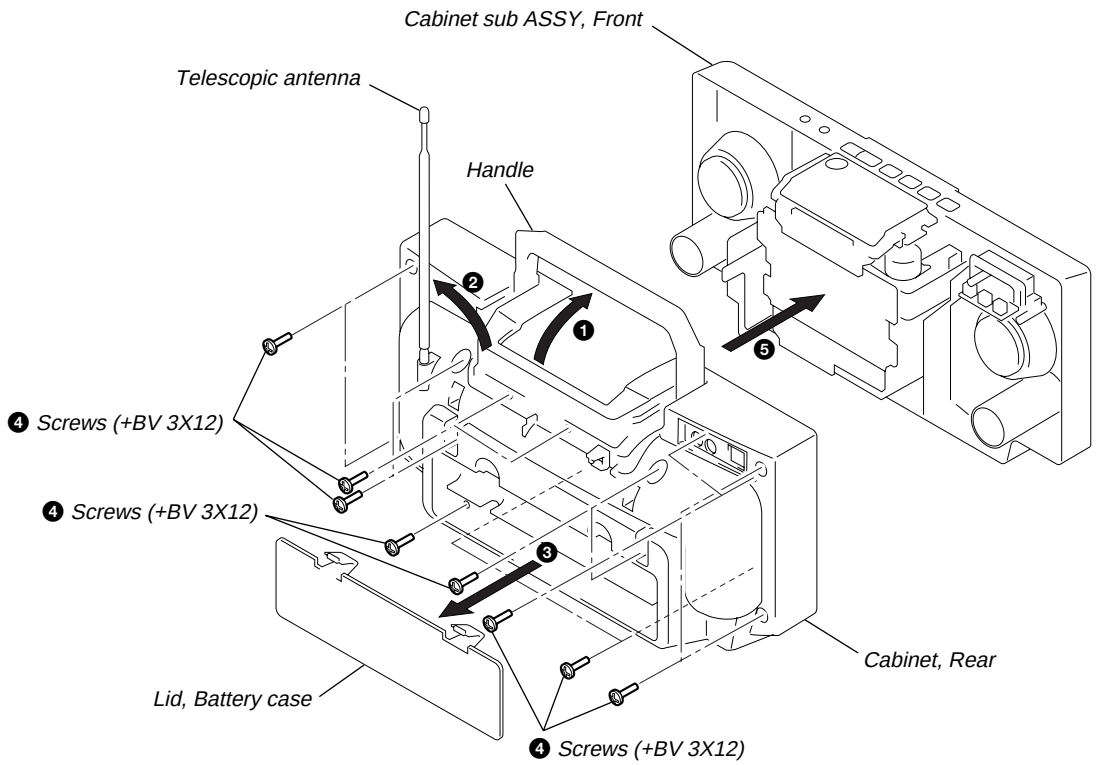
< CD BLOCK SECTION >

- CD block section
  - Tray ASSY, CD → Optical pick-up block, Pick-up relay board
  - Loading board

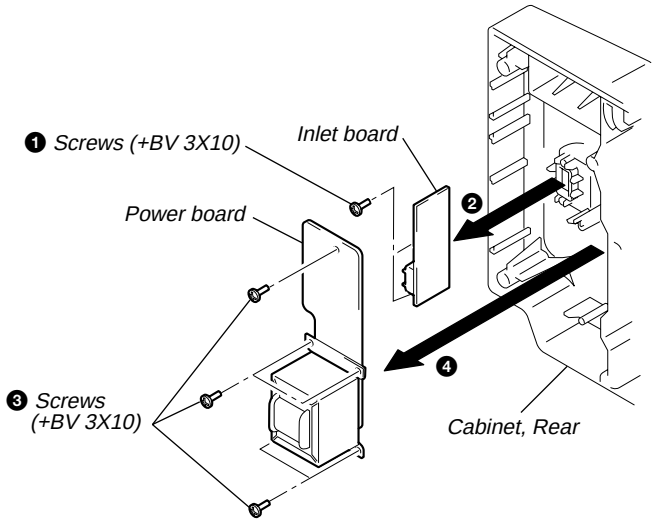
Note: Follow the disassembly procedure in the numerical order given.

<MAIN BLOCK SECTION>

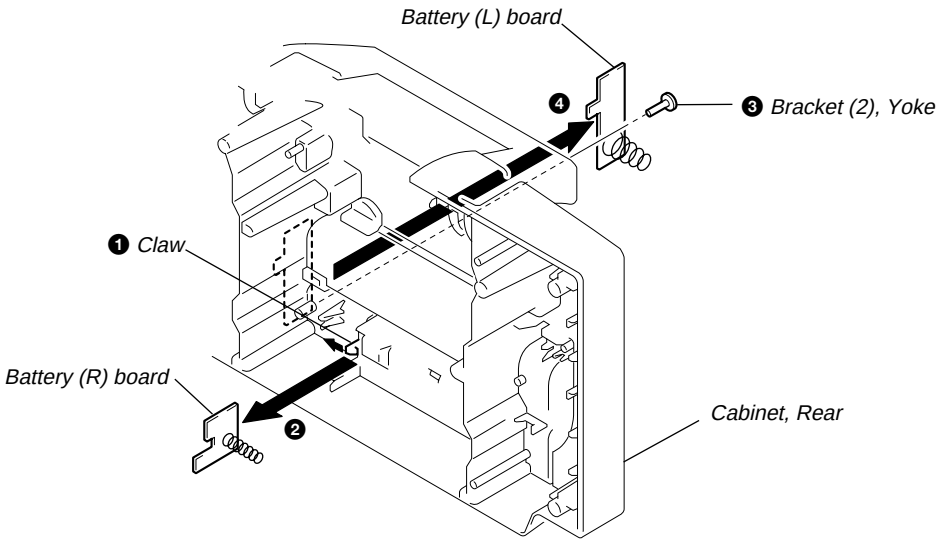
3-1. "CABINET, REAR", "CABINET SUB ASSY, FRONT"



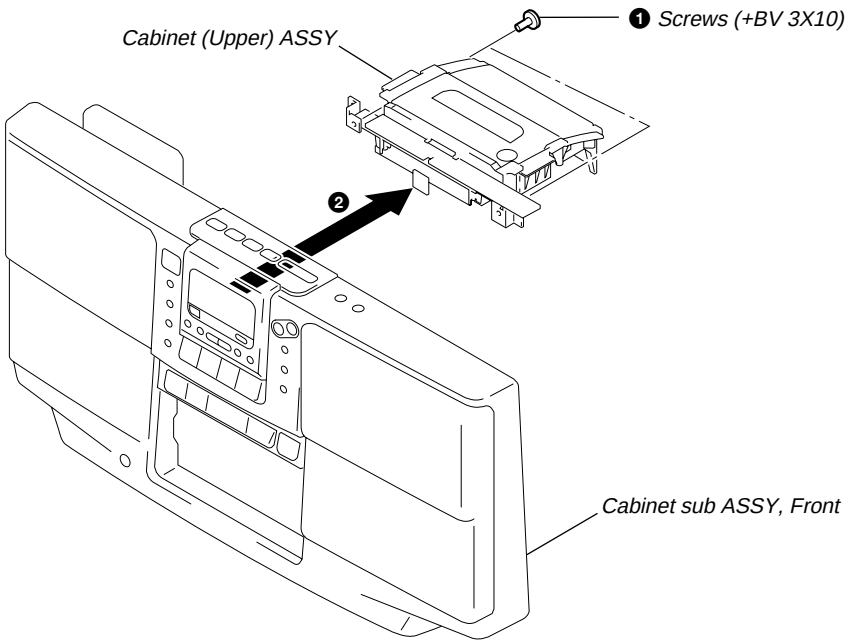
3-2. INLET BOARD, POWER BOARD



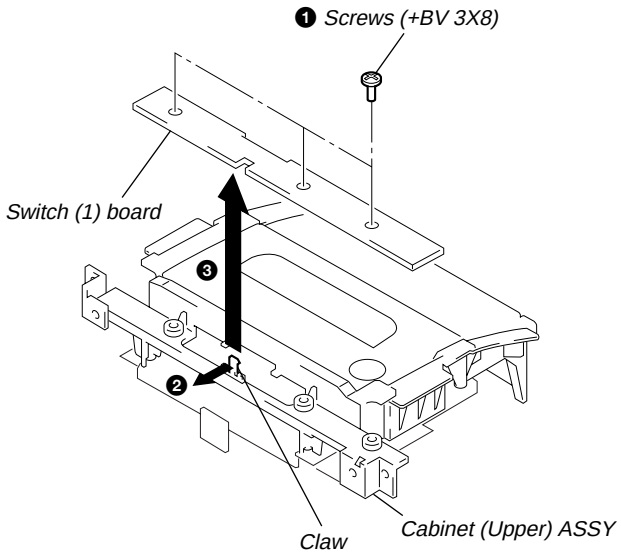
3-3. BATTERY (R) BOARD, BATTERY (L) BOARD



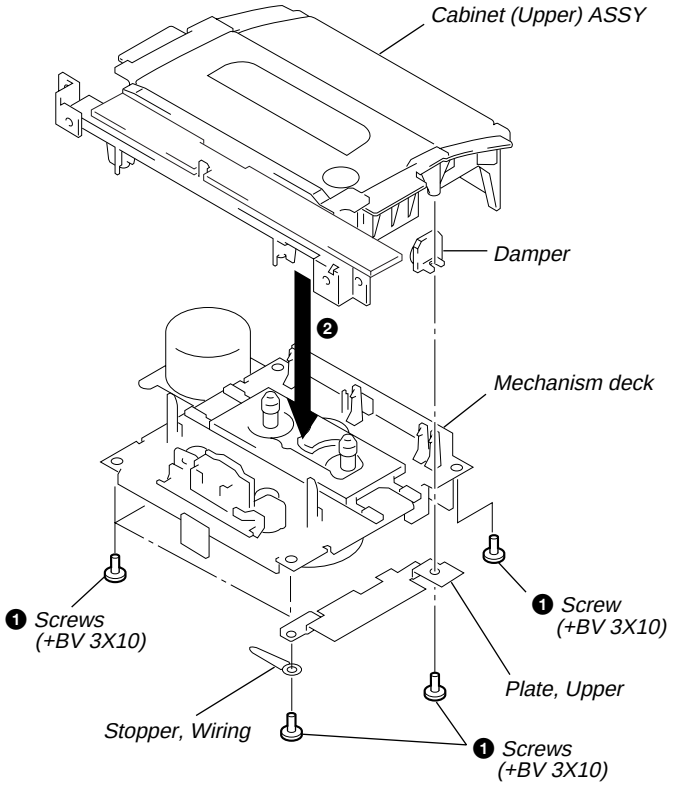
3-4. CABINET (UPPER) ASSY



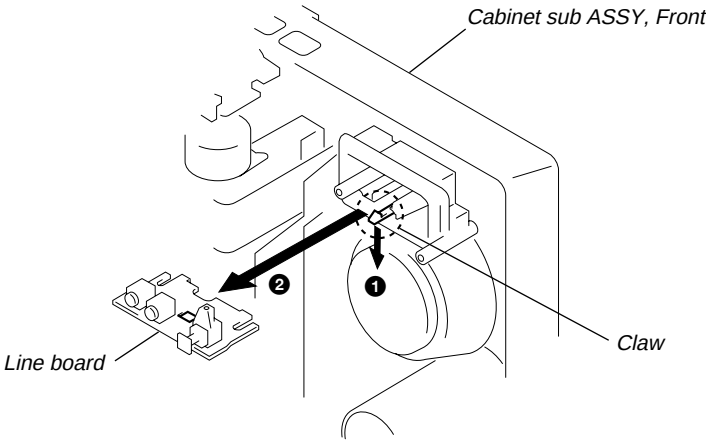
3-5. SWITCH (1) BOARD



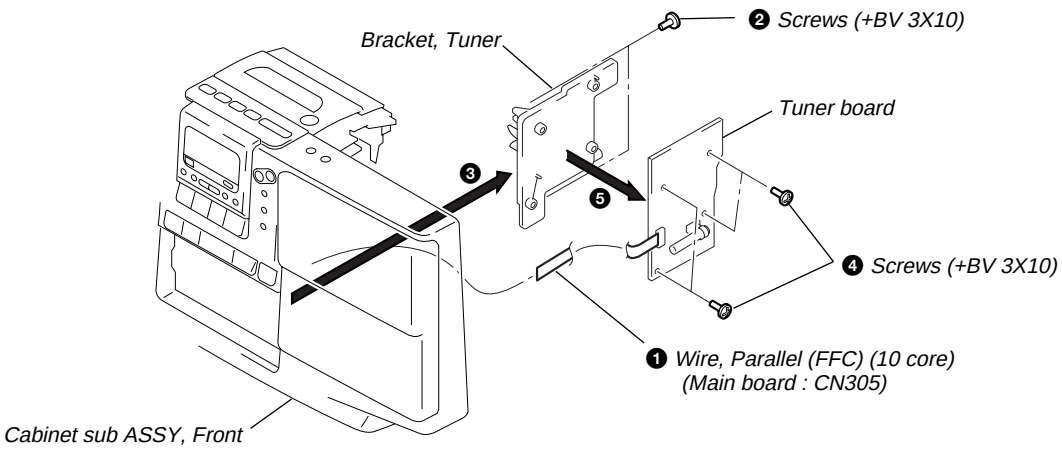
3-6. MECHANISM DECK



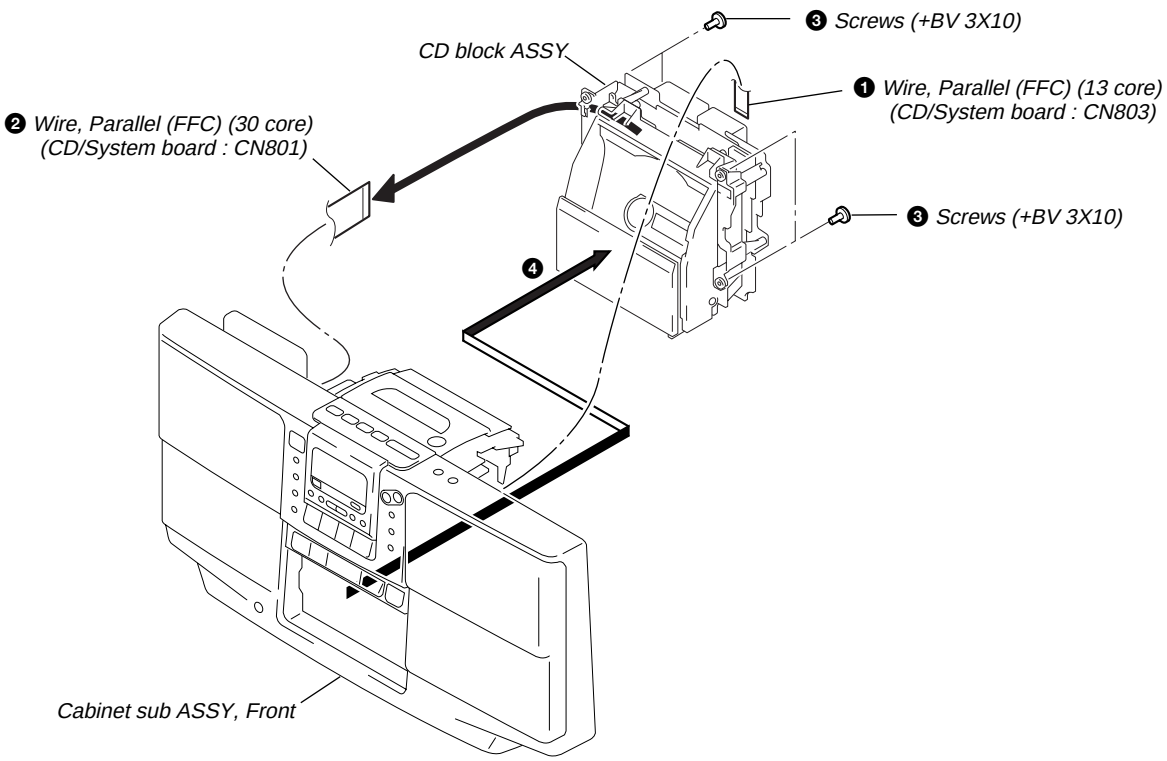
3-7. LINE BOARD



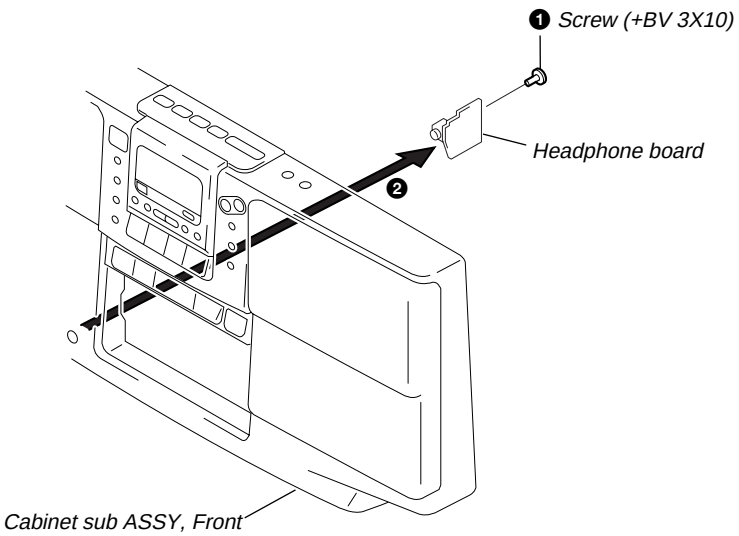
3-8. TUNER BOARD



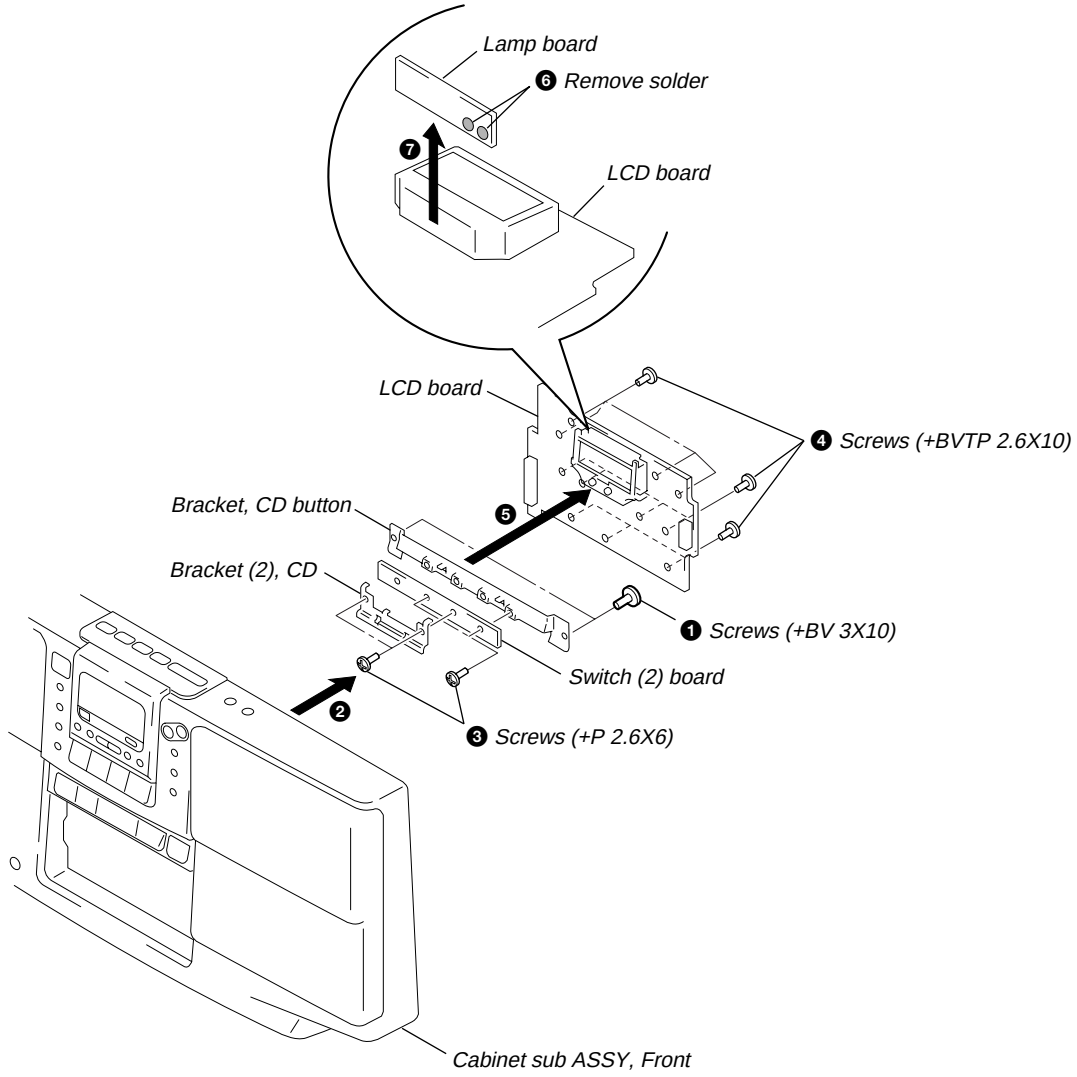
3-9. CD BLOCK ASSY


❸ Screws (+BV 3X10)
CD block ASSY
❶ Wire, Parallel (FFC) (13 core)
(CD/System board : CN803)
❷ Wire, Parallel (FFC) (30 core)
(CD/System board : CN801)
❸ Screws (+BV 3X10)
❹
Cabinet sub ASSY, Front

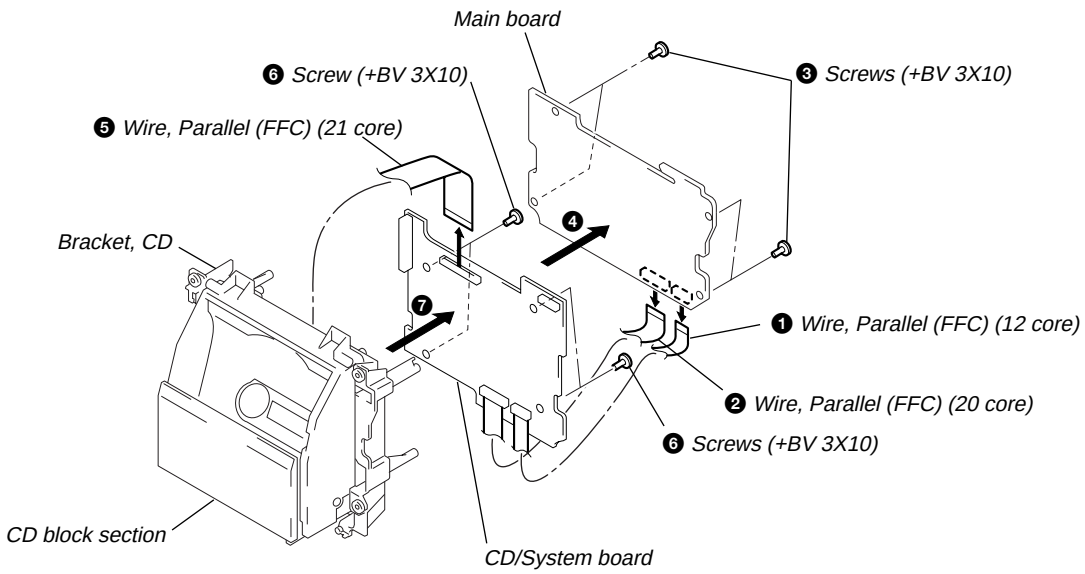
3-10. HEADPHONE BOARD



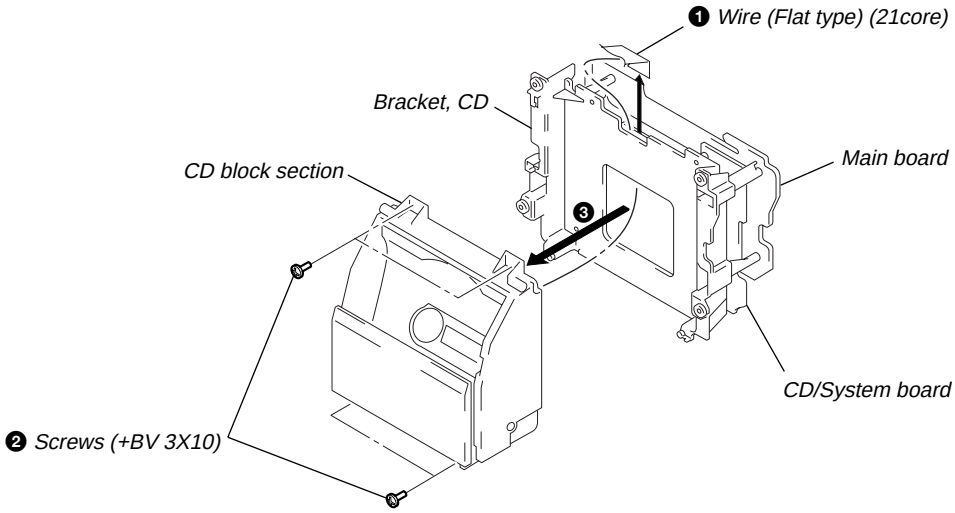
3-11. SWITCH (2) BOARD, LCD BOARD, LAMP BOARD



3-12. MAIN BOARD, CD/SYSTEM BOARD

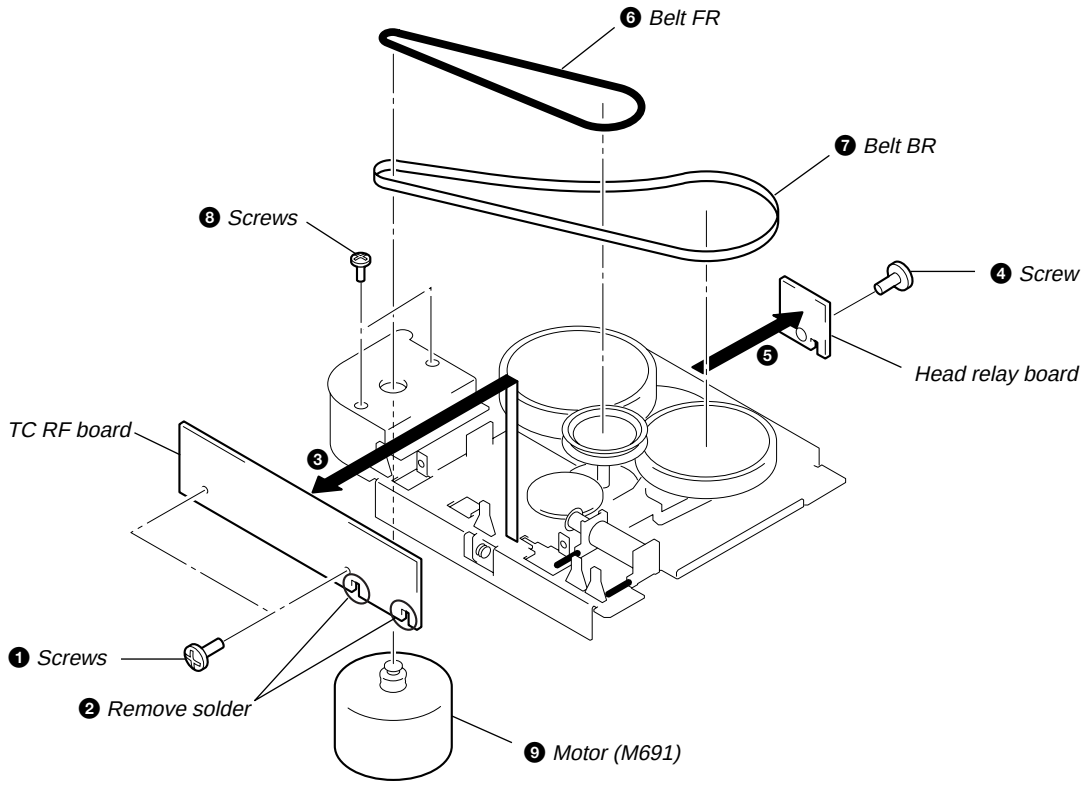


3-13. CD BLOCK SECTION



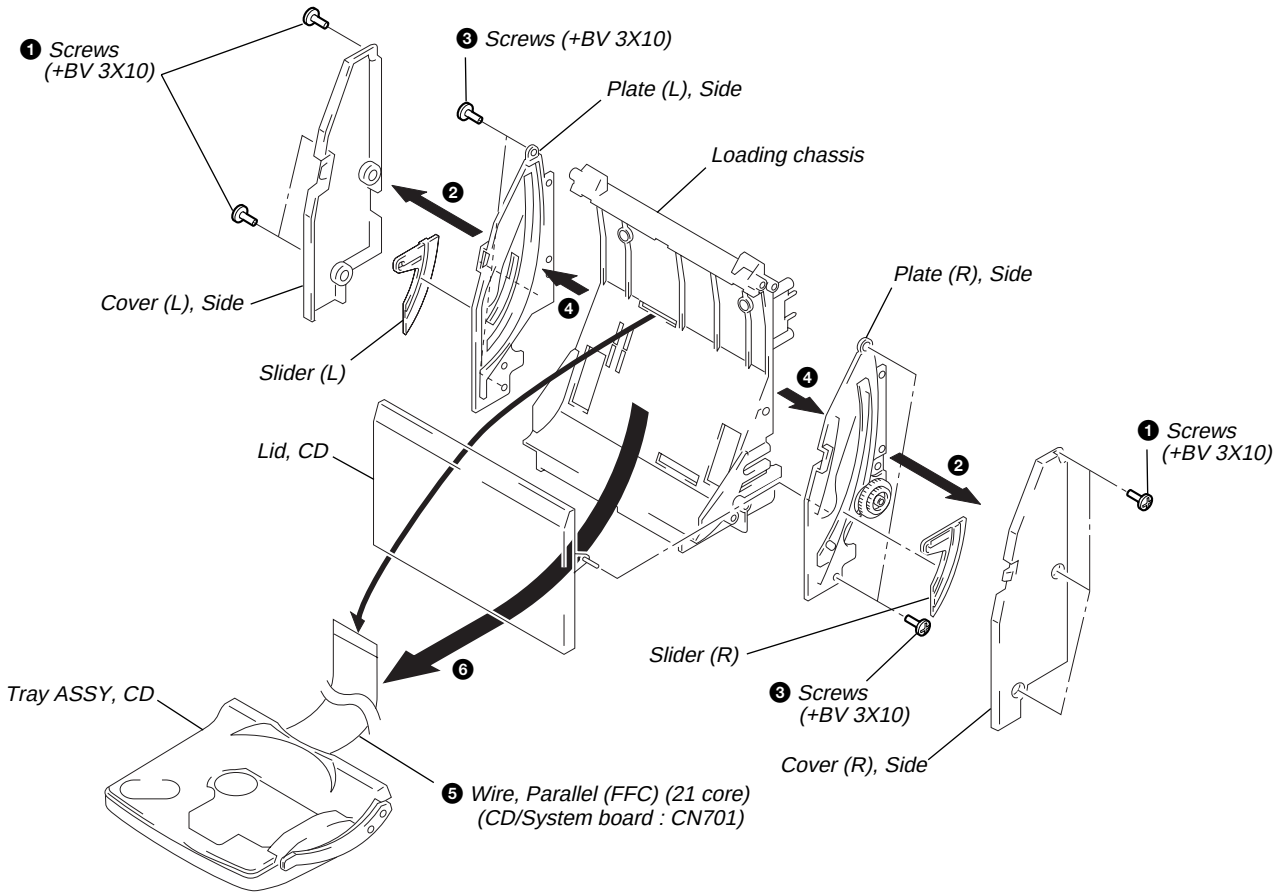
<MECHANISM DECK SECTION>

3-14. TC RF BOARD, HEAD RELAY BOARD, BELT (FR/BR), MOTOR (M691)

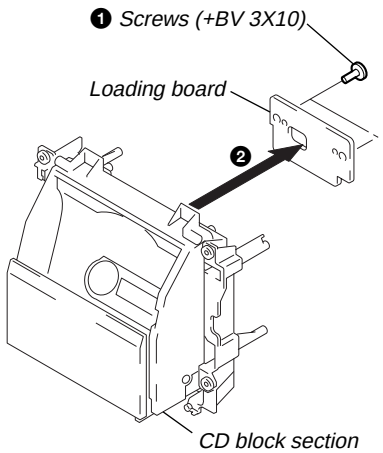


<CD BLOCK SECTION>

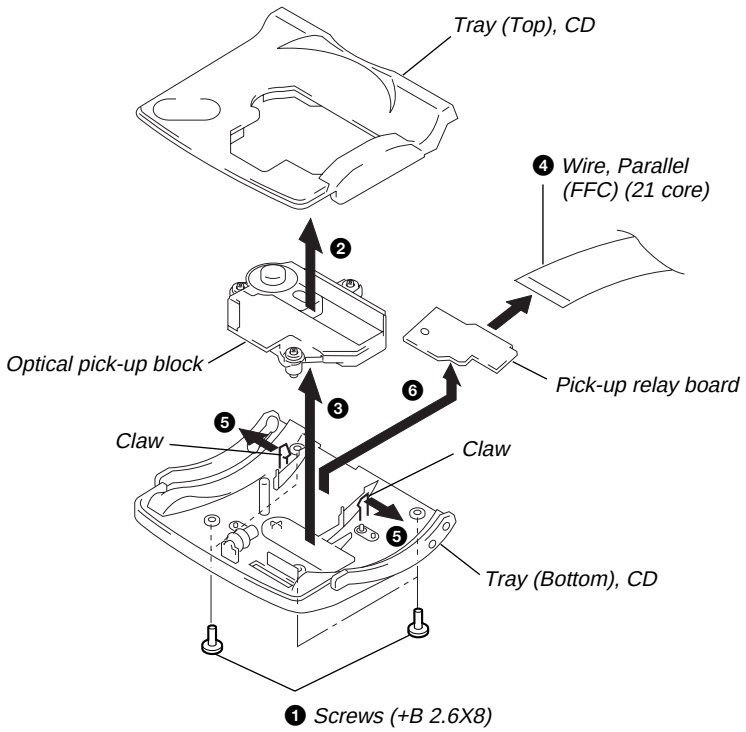
3-15. TRAY ASSY, CD



3-16. LOADING BOARD



3-17. OPTICAL PICK-UP BLOCK, PICK-UP RELAY BOARD

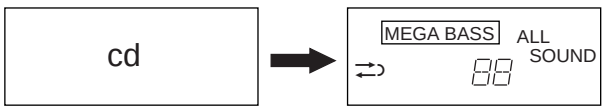


SECTION 4
TEST MODE

CD SECTION

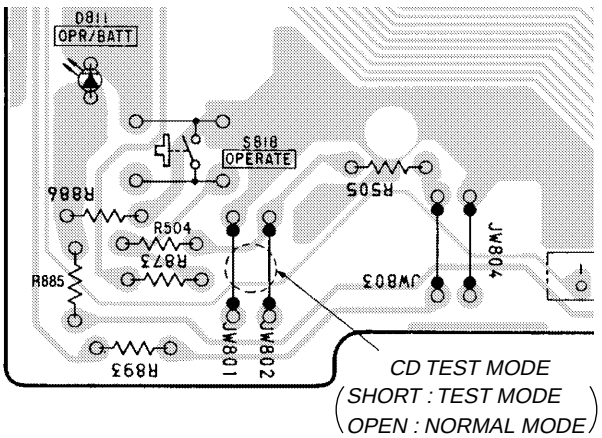
1. Entering CD test mode

With the OPERATE button OFF, short JW801 and JW802 on the LCD board. (You need a moment for the short.)
The LCD display changes as in the diagram and the unit goes into test mode.



When you press the ▶II key, the CD rotates and when you press the ▶II key again, the CD plays (the track servo comes on)(but no sound is issued).
Pressing the ▶II key starts automatic adjustment and the value changes, but this value is not a problem.

[LCD BOARD] (Conductor side)



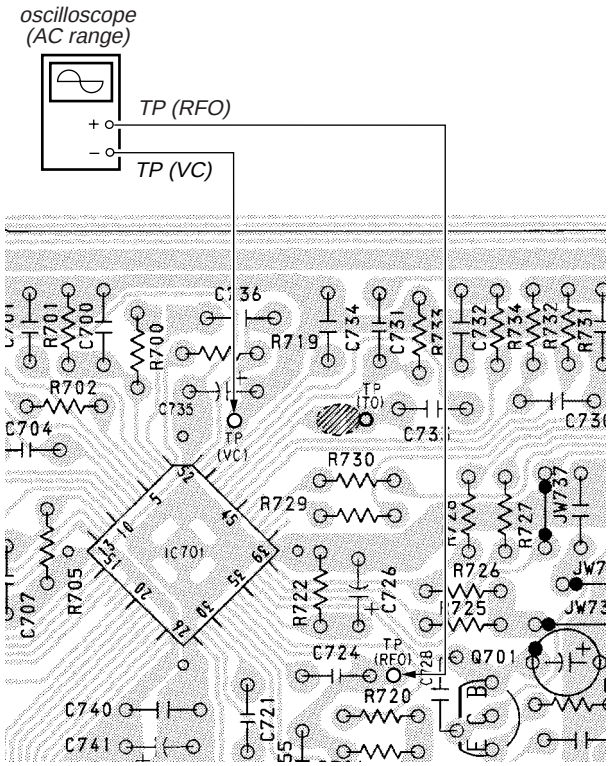
2. Exiting test mode

With the unit in test mode, when you press the OPERATE button to OFF, test mode ends.

3. RF LEVEL and jitter check

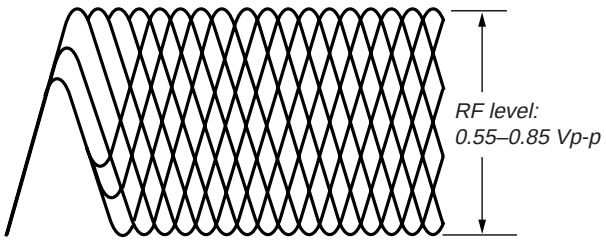
Test mode PLAY status

Connection P oint : CD/System board (Conductor side)



Check to see that the jitter is less than 9.0 nsec. and RF level is between 0.55 – 0.85Vp-p.

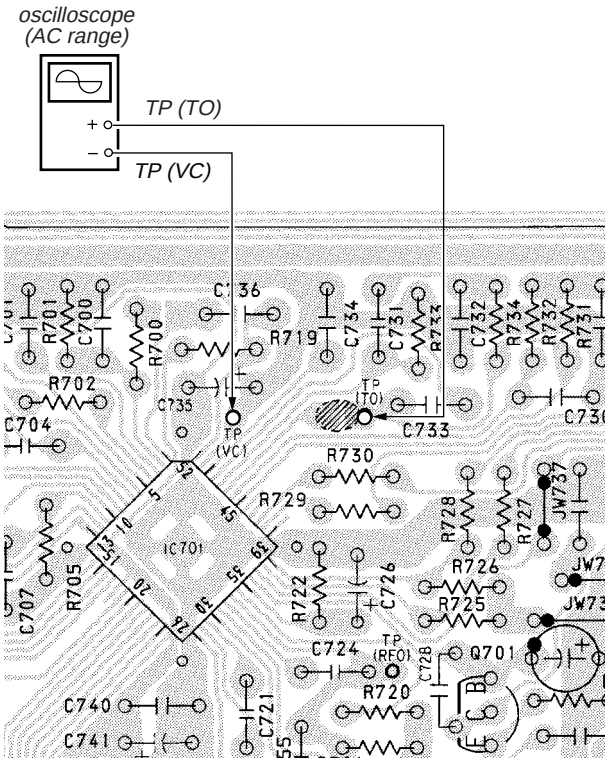
VOLT/DIV : 200mV (using 10:1 probe)
TIME/DIV : 500ns



SECTION 5
ADJUSTMENTS

4. TRAVERSE SIGNAL check

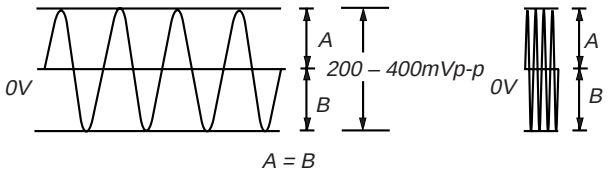
Connection P oint : CD/System board (Conductor side)



Press the FF or FR from 3.

Check to see that the traverse signal level is between 200 to 400mVp-p.

Note:
Extend the sweep time for easier view.



A = B

5. RELEASE THE TEST MODE

After completed with adjustment, press the OPERATE button to release the test mode.

5-1. MECHANICAL ADJUSTMENTS

TAPE RECORDER SECTION

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback/erase head pinch roller
   rubber belts capstan
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque Meter	Meter Reading
Forward	CQ-102C	36 to 61 g • cm (0.5 to 0.84 oz • inch)
Forward Back Tension	CQ-102C	2 to 6 g • cm (0.028 to 0.083 oz • inch)
Reverse	CQ-102RC	36 to 61 g • cm (0.5 to 0.84 oz • inch)
Reverse Back Tension	CQ-102RC	2 to 6 g • cm (0.028 to 0.083 oz • inch)
FF/REW	CQ-201B	61 to 143 g • cm (0.85 to 1.98 oz • inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 100g (more than 3.53 oz)
REV	CQ-403A	more than 100g (more than 3.53 oz)

5-2. ELECTRICAL ADJUSTMENTS

TAPE RECORDER SECTION 0dB = 0.775V

1. The adjustnemts should be performed in the order in the service manual. (As a general rule playback circuit adjustment should be completed beforeming recording circuit adjustment.)
2. The adjustments should be performed for bothe L-CH and R-CH unless otherwise indicated.

Standard Intput Level

Input terminal	LINE IN
source impedance	10kΩ
input signal level	0.5V (–3.8dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47kΩ
output signal level	0.5V (–3.8dB)

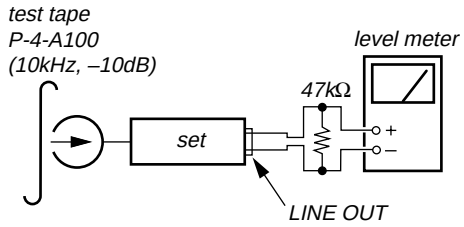
Test Tape

Type	Signal	Used for
P-4-A100	10kHz, –10dB	Azimuth Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

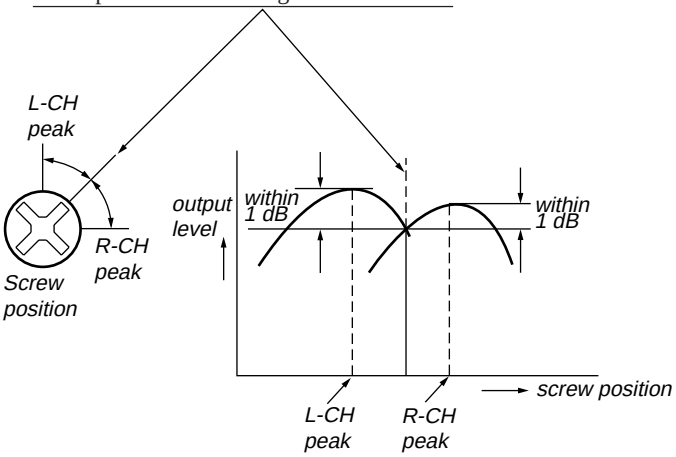
Record/Playback/Erase Head Azimuth Adjustment

Procedure :

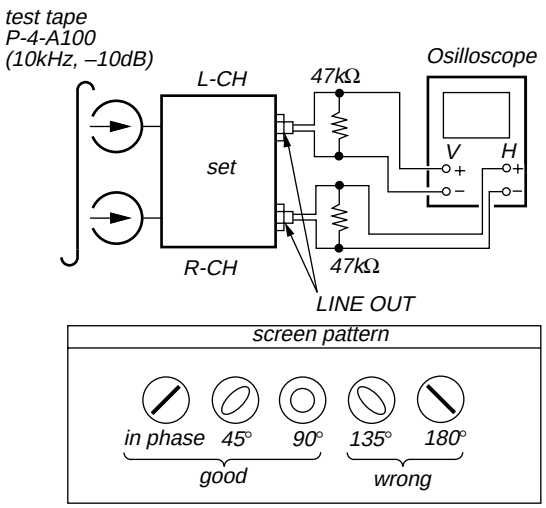
1. Mode : FWD playback



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

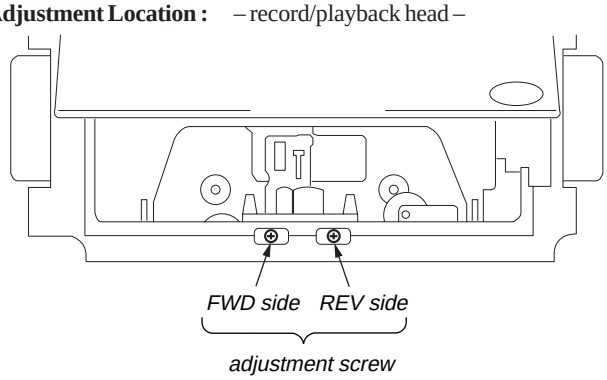


3. Phase Check
   Mode : FWD playback



4. Change the reverse playback mode and repeat the step 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

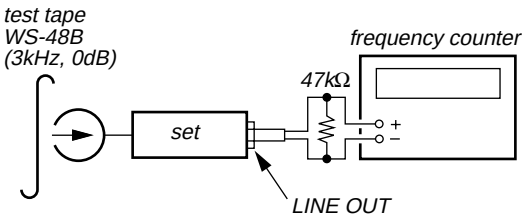
Adjustment Location : – record/playback head –



Tape Speed Adjustment

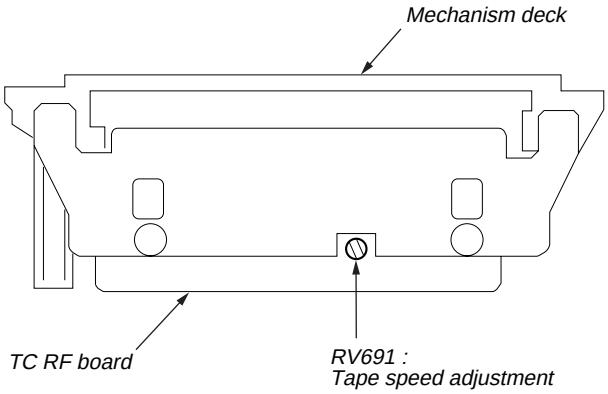
Procedure :

– FWD Playback Mode –



1. Set to FWD playback mode.
2. Adjust RV691 so that the frequency counter reading becomes 3,000Hz.
   Standar d v alue : 2,970 to 3,030Hz
3. Set to REV playback mode.
   Confirm the frequency should be within the standard value.
4. Confirm the frequency difference between beginning and the end of tape should be within 1.5% (45Hz).

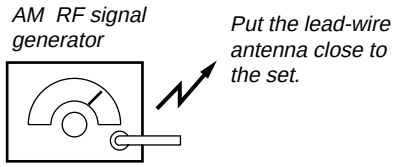
Adjustment Location : TC RF board



TUNER SECTION

AM Section

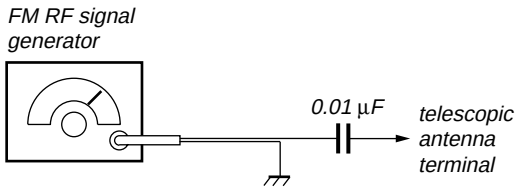
RADIO BAND button : MW or LW
Volume : MIN



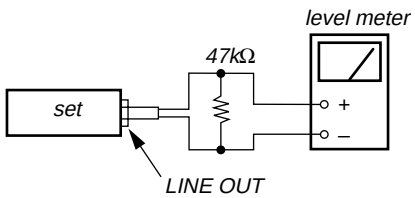
30% amplitude modulation by 400Hz signal.
Output level : as low as possible

FM Section

RADIO BAND button : FM
Volume : MIN



22.5kHz frequency deviation by 400Hz signal.
Output level : as low as possible



Adjustment Location : Tuner board (See page 17)

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

MW/LW IF ADJUSTMENT	
Adjust for a maximum reading on level meter.	
CFT1	450kHz

MW FREQUENCY COVERAGE ADJUSTMENT		
Adjust part	Frequency display	reading on digital voltmeter.
L4	531kHz	0.65 – 1.05V
CT2	1,611kHz	5.1 – 6.1V

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3–1	621kHz
CT4	1,404kHz

LW FREQUENCY COVERAGE ADJUSTMENT		
Adjust part	Frequency display	reading on digital voltmeter
CT3	279kHz	5.1 – 5.5V
Confirmation	153kHz	0.6 – 0.8V

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3 – 2	162kHz
CT5	261kHz

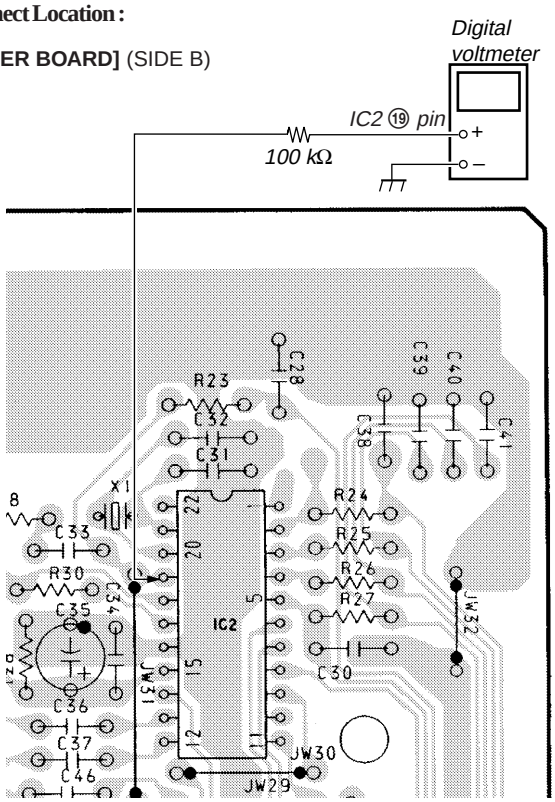
FM FREQUENCY COVERAGE ADJUSTMENT		
Adjust part	Frequency display	reading on digital voltmeter
Confirmation	87.5MHz	1.45 – 1.85V
L2	108MHz	3.6 – 4.6V

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	87.5MHz
CT1	108MHz

Frequency Coverage Adjustment

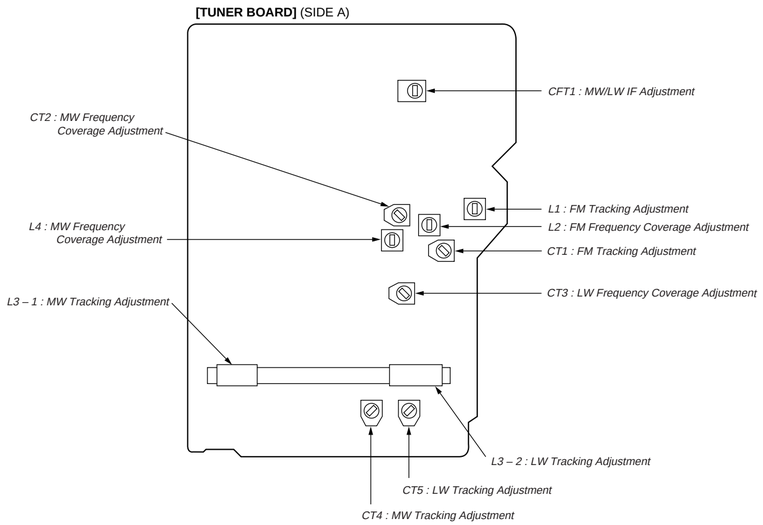
Connect Location :

[TUNER BOARD] (SIDE B)



SECTION 6
DIAGRAMS

Adjustment Location :


[TUNER BOARD] (SIDE A)
CFT1 : MW/LW IF Adjustment
CT2 : MW Frequency Coverage Adjustment
L1 : FM Tracking Adjustment
L2 : FM Frequency Coverage Adjustment
L4 : MW Frequency Coverage Adjustment
CT1 : FM Tracking Adjustment
CT3 : LW Frequency Coverage Adjustment
L3 – 1 : MW Tracking Adjustment
L3 – 2 : LW Tracking Adjustment
CT5 : LW Tracking Adjustment
CT4 : MW Tracking Adjustment

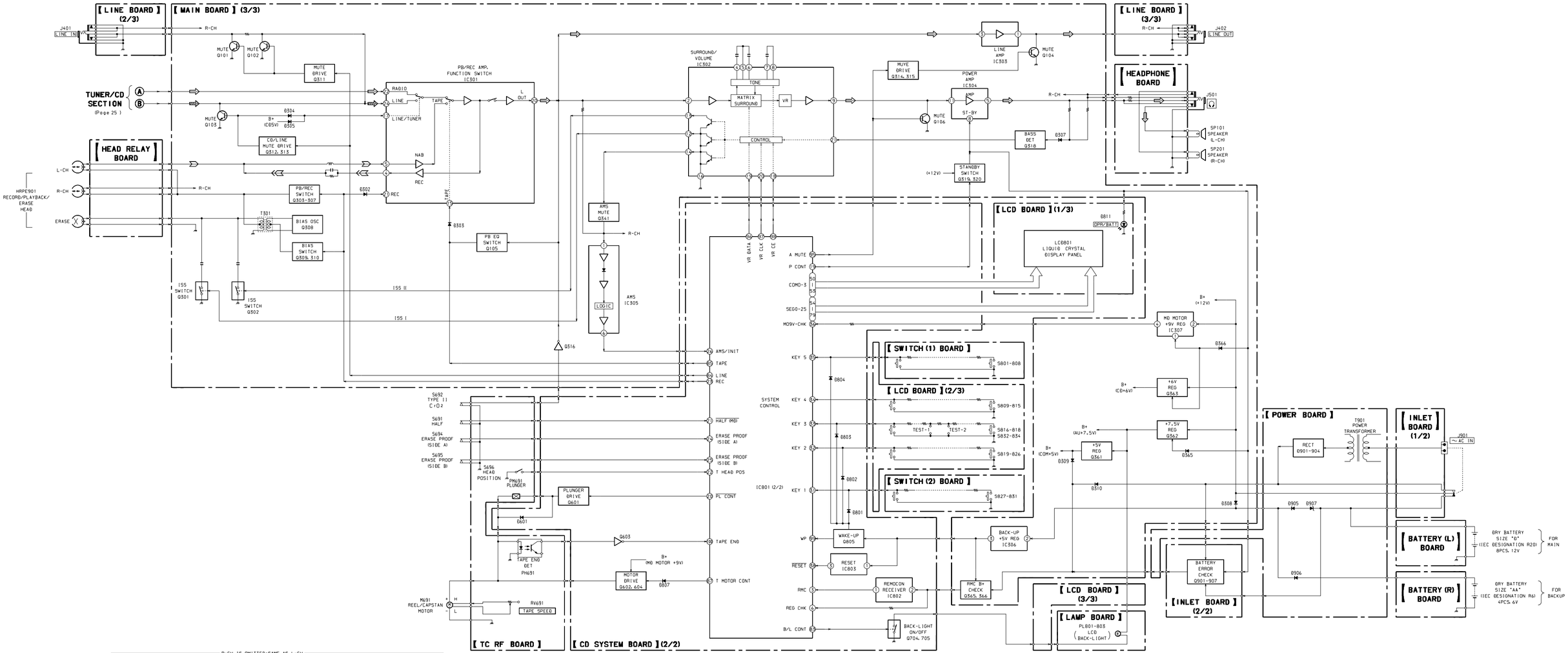
6-1. EXPLANATION OF IC TERMINALS

IC801 CXP83232A-010Q (SYSTEM CONTROL) CD/SYSTEM BOARD

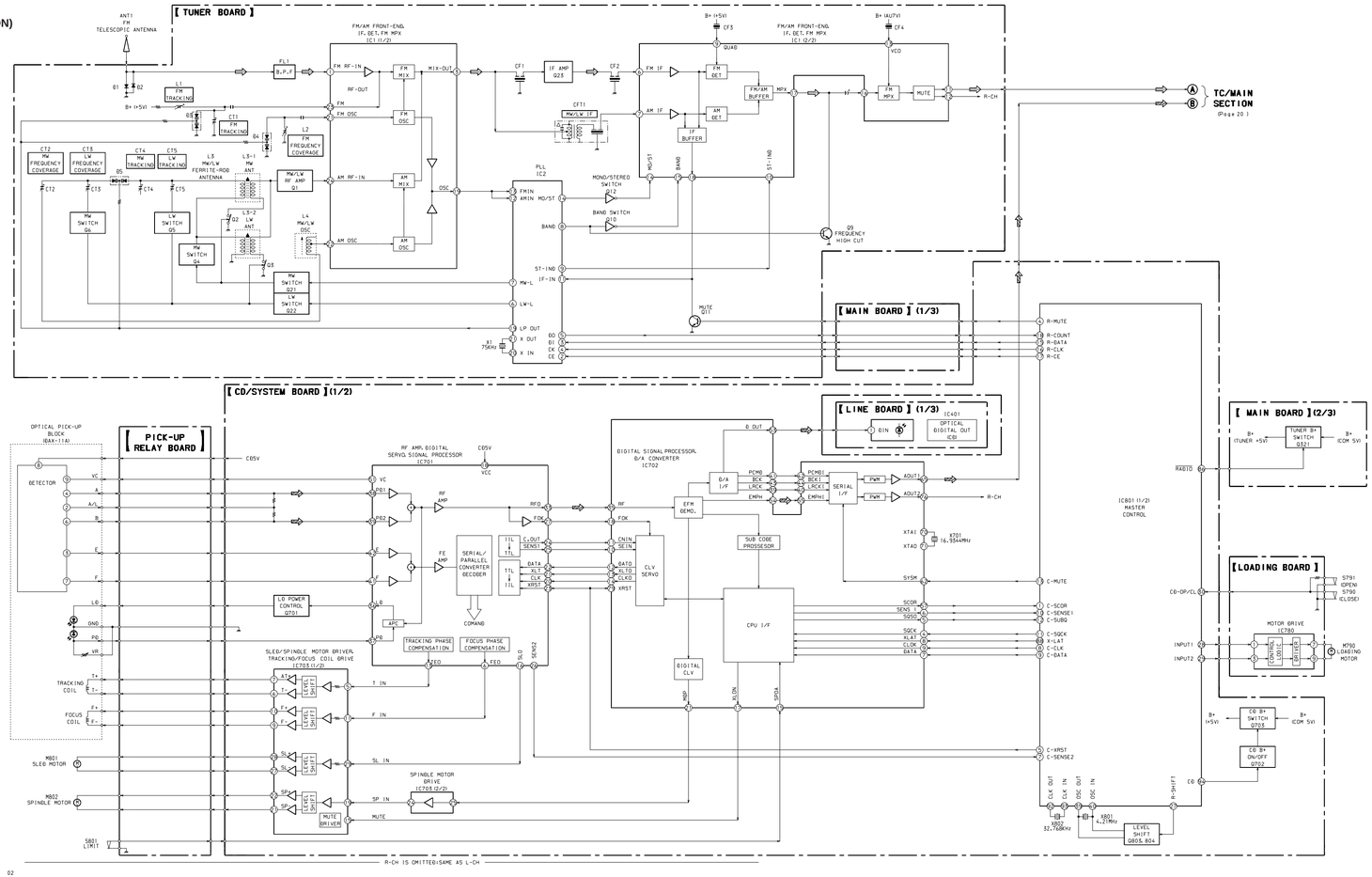
Pin No.	Pin name	I/O	Description
1	C-SOR	I	CD DSP command data input.
2	NC	–	Not used (“L” level).
3	RMC	I	Remote control signal input.
4	R-MUTE	O	Tuner mute signal output.
5	C-XRST	O	CD system reset output.
6	REG-CHK	I	Regulator voltage check input.
7	C-SENSE 2	I	CD-SENSE input.
8	C-CLK	O	CD DSP command clock output.
9	C-DATA	O	CD DSP command data output.
10	C-SENSE 1	I	CD SENSE input.
11	C-SQCK	O	CD SUB-Q read out clock output.
12	C-SQSO	I	CD-SQSO data input.
13	C-MUTE	O	Mute signal output for DSP (IC702).
14	NC	–	Not used (OPEN).
15	R-DATA	O	PLL IC data output.
16	R-CLK	O	PLL IC clock output.
17	R-CE	O	PLL IC chip enable output.
18	R-COUNT	I	PLL IC data input.
19	P-CONT	O	POWER ON/OFF control output.
20	PL-CONT	O	Plunger ON/OFF control output.
21	$\overline{\text{HALF (M/D)}}$	I	Cassette half detect input.
22	$\overline{\text{T-HEAD POS}}$	I	Head position detect input.
23	REC	O	REC bias ON/OFF control output.
24	PROOF (A)	I	Half pawl input at A-side.
25	PROOF (B)	I	Half pawl input at B-side.
26	AMS/INIT	I	TC AMS signal input/Initial terminal.
27	R-SHIFT	O	System clock shift output.
28	INPUT 1	O	Loading motor control output.
29	INPUT 2	O	Loading motor control output.
30	CD-OP/CL	I	CD tray open/close detect input.
31	KEY 1	I	Key input terminal.
32	KEY 2	I	Key input terminal.
33	KEY 3	I	Key input terminal.
34	KEY 4	I	Key input terminal.
35	KEY 5	I	Key input terminal.
36	MO9V-CHK	I	Motor power supply voltage check.
37	MODEL ID	I	Model destination setting input.
38	$\overline{\text{RESET}}$	I	System Reset terminal.
39	OSC-OUT	O	System clock oscillator output (4.21MHz).
40	OSC-IN	I	System clock oscillator input (4.21MHz).
41	GND	–	Ground terminal.
42	NC	–	Not used (OPEN).
43	NC	–	Not used (Ground).
44	V REF	I	Reference voltage input.
45	GND	–	Ground terminal.

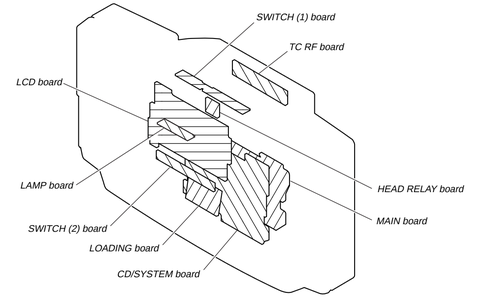
Pin No.	Pin name	I/O	Description
46	VDDL	O	LCD drive bias control output.
47	VDD3	O	LCD drive bias power supply.
48	VDD2	O	LCD drive bias power supply.
49	VDD1	O	LCD drive bias power supply.
50	COM0	O	LCD common output.
51	COM1	O	LCD common output.
52	COM2	O	LCD common output.
53	COM3	O	LCD common output.
54 – 79	SEG0–SEG25	O	LCD segment output.
80	NC	–	Not used (OPEN).
81	NC	–	Not used (OPEN).
82	NC	–	Not used (OPEN).
83	$\overline{\text{B/L-CONT}}$	O	Back-light ON/OFF control output.
84	LINE	O	Function output for LINE.
85	TAPE	O	Function output for TAPE
86	$\overline{\text{RADIO}}$	O	Function output for RADIO
87	T-MOTOR-CONT	O	Motor control signal output.
88	X-LAT	O	CD DSP command lach output.
89	VDD	–	Power supply.
90	NC	–	Not used (connect to VDD).
91	GND	–	Ground.
92	CLK OUT	O	Sub system clock oscillator (32.768kHz).
93	CLK IN	I	Sub system clock oscillator (32.768kHz).
94	CD	O	Function output for CD.
95	A-MUTE	O	Audio mute signal output.
96	VR-DATA	O	Volume clock output.
97	VR-CLK	O	Volume clock output.
98	VR-CE	O	Volume enable output.
99	WP	I	Wake-up signal input.
100	TAPE END	I	Tape end detect input.

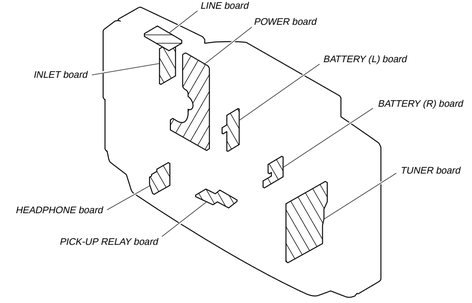
6-2. BLOCK DIAGRAMS (TAPE, MAIN SECTION)



6-3. BLOCK DIAGRAMS (TUNER, CD SECTION)





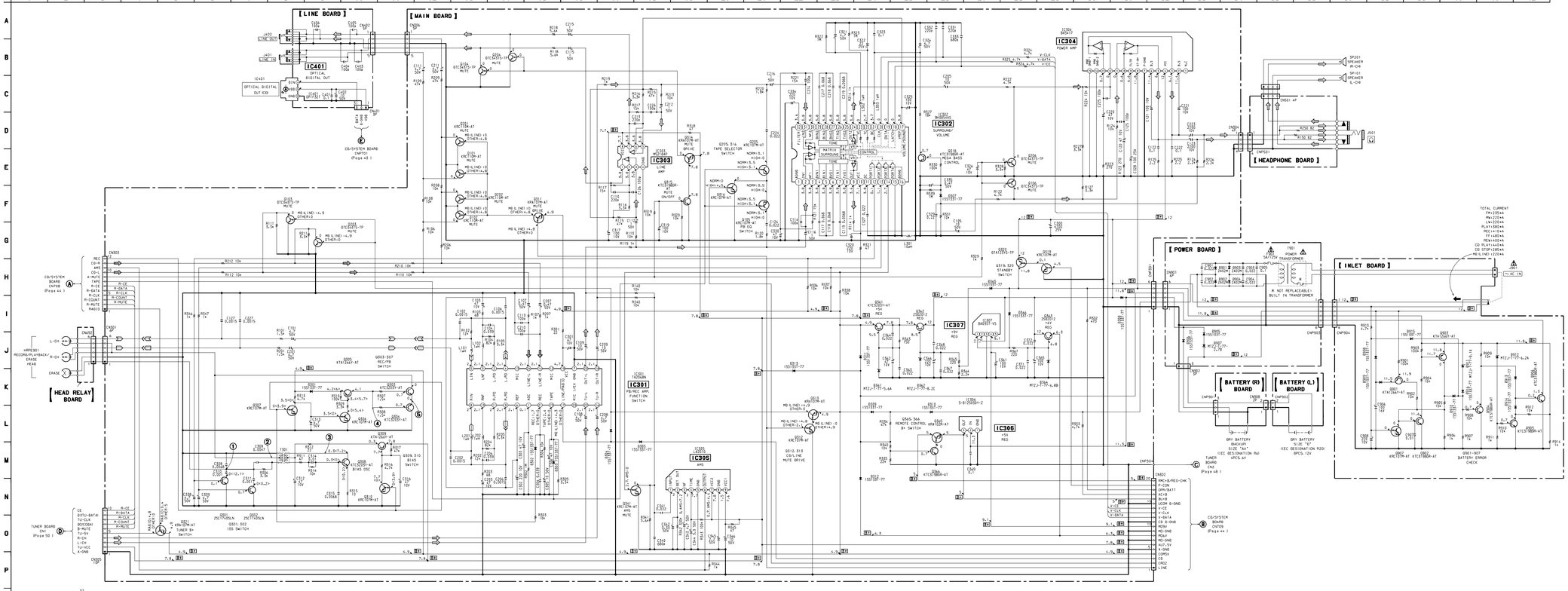


• Signal path.
⇨ : FM
⇛ : CD

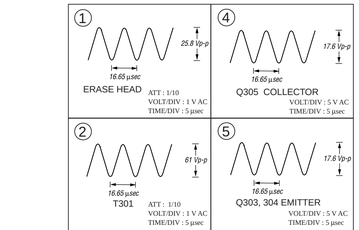
● **Circuit Boards Location**

6-5. SCHEMATIC DIAGRAM (MAIN SECTION)

● Refer to page 51 for IC Block Diagrams.



● Waveforms (Main Section)

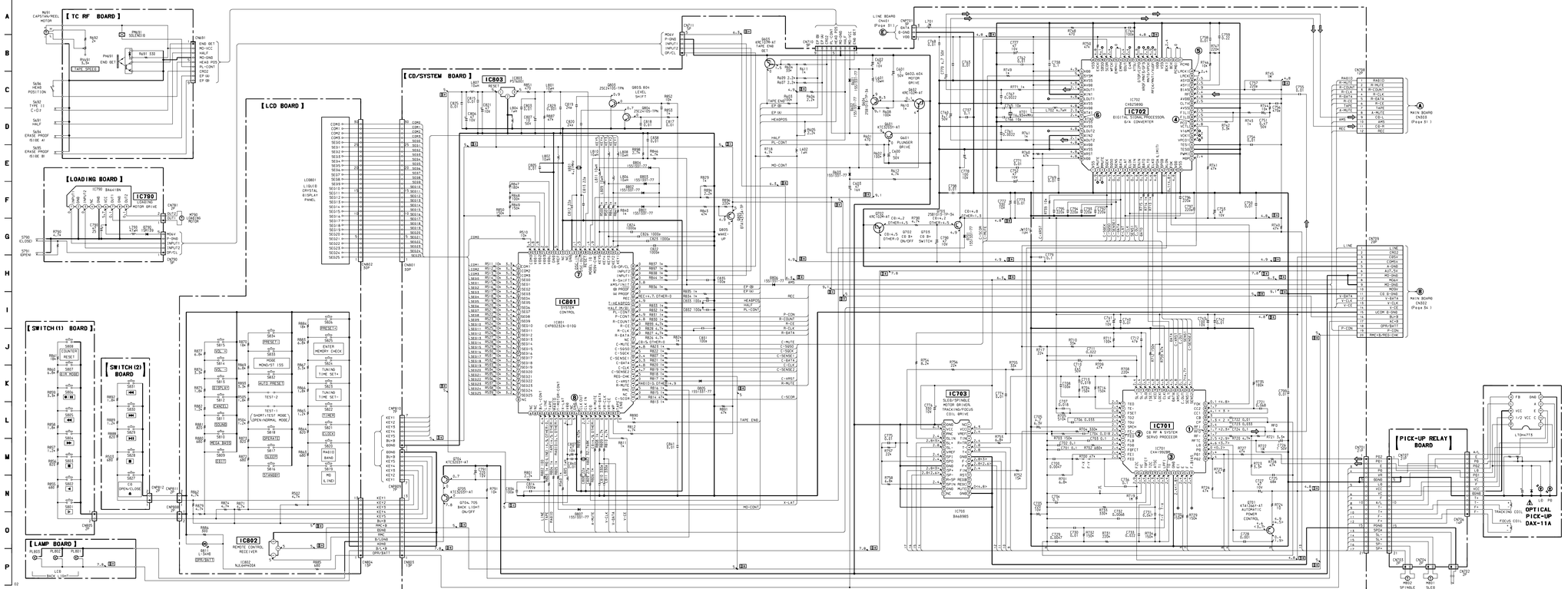


Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B + : B+ Line.
- Power voltage is dc 12V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  < > : REC
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : FM
  : PB (L-CH)
  : REC (L-CH)
  : PB (R-CH)
  : REC (R-CH)
  : CD



● Waveforms (CD/System Section)

① (PLAY MODE)
IC701 ㊸ (RFO)
VOLT/DIV : 200 m V AC
TIME/DIV : 0.5 μsec
0.55 – 0.85 Vp-p

② (PLAY MODE)
IC701 ㊻ (FEO)
VOLT/DIV : 0.2 V AC
TIME/DIV : 0.2 msec
0.6 Vp-p

③ (PLAY MODE)
IC701 ㊹ (TEO)
VOLT/DIV : 0.2 V AC
TIME/DIV : 0.5 msec
0.7 Vp-p

④
IC702 ㉙ (PCO)
VOLT/DIV : 0.5 V AC
TIME/DIV : 1 μsec
2.2 Vp-p
5.75 μsec

⑤
IC702 ㊽ (LRCKI)
VOLT/DIV : 1 V AC
TIME/DIV : 5 μsec
4.8 Vp-p
22.75 μsec

⑥
IC702 ㊼ (XTAO)
VOLT/DIV : 0.5 V AC
TIME/DIV : 20 nsec
2.0 Vp-p
16.44 MHz

⑦
IC801 ㉖ (OSC OUT)
VOLT/DIV : 0.5 V AC
TIME/DIV : 50 nsec
2.0 Vp-p
4.21 MHz

⑧
IC801 ㉕ (CLK OUT)
VOLT/DIV : 1 V AC
TIME/DIV : 10 μsec
4.65 Vp-p
32.768 kHz

Note:
- All capacitors are in μF unless otherwise noted. pF: μμF
  50 WV or less are not indicated except for electrolytics and tantaliums.
- All resistors are in Ω and ¼-W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM (RADIO SECTION),
  CD STOP (CD SECTION)
  < > : CD PLAY
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

6-8. PRINTED WIRING BOARDS (TUNER SECTION)

● Refer to page 26 for Circuit Boards Location.

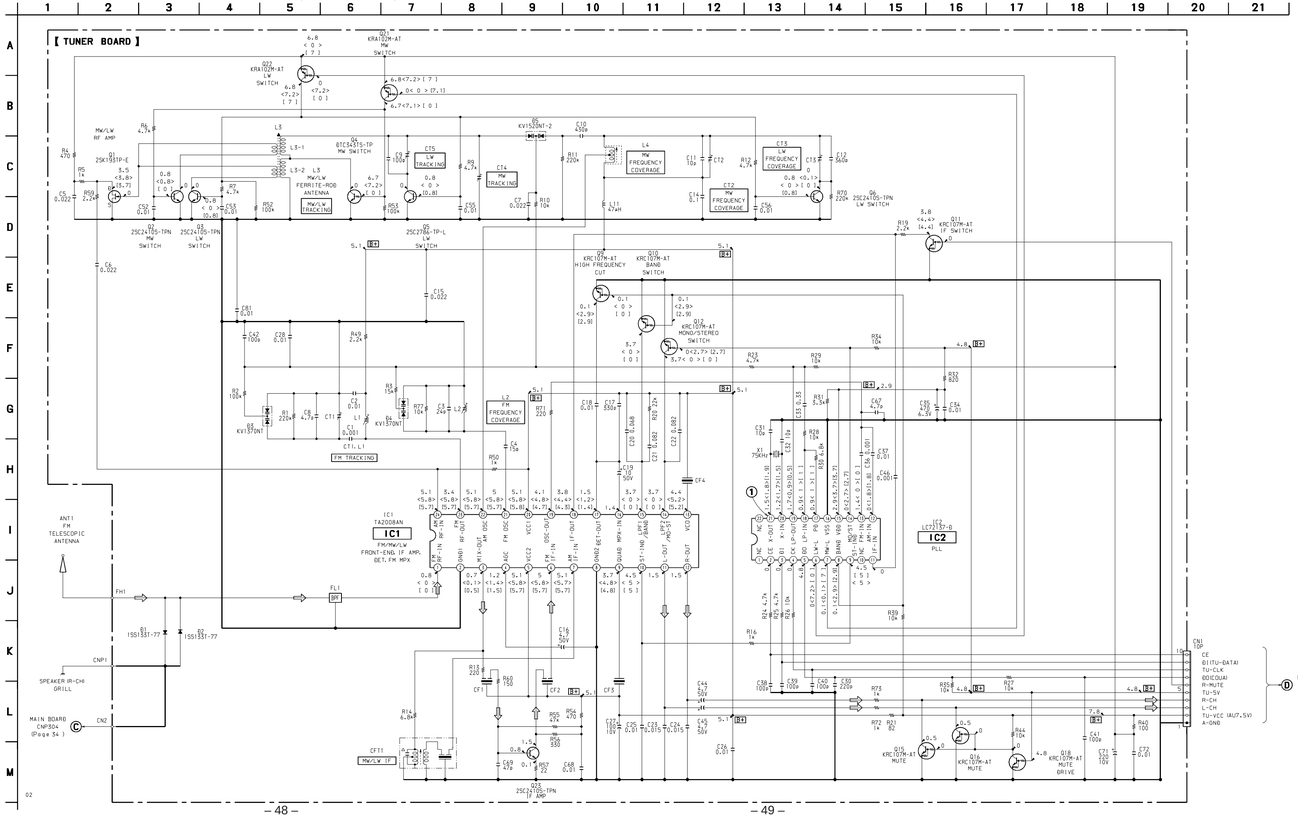
● **Semiconductor Location**

Ref. No.	Location
D1	C-2
D2	C-2
D3	E-3
D4	D-3
D5	G-4
IC1	D-4
IC2	C-6
Q1	G-4
Q2	G-5
Q3	H-5
Q4	F-5
Q5	H-5
Q6	F-4
Q9	F-5
Q10	F-5
Q11	D-6
Q12	E-5
Q15	G-7
Q16	G-6
Q18	H-7
Q21	G-6
Q22	I-5
Q23	B-3

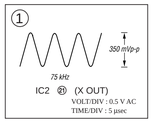
Note:
- ⊙——: parts extracted from the component side.
- ▒▒▒: Pattern from the side which enables seeing.

6-9. SCHEMATIC DIAGRAM (TUNER SECTION)

● Refer to page 55 for IC Block Diagrams.



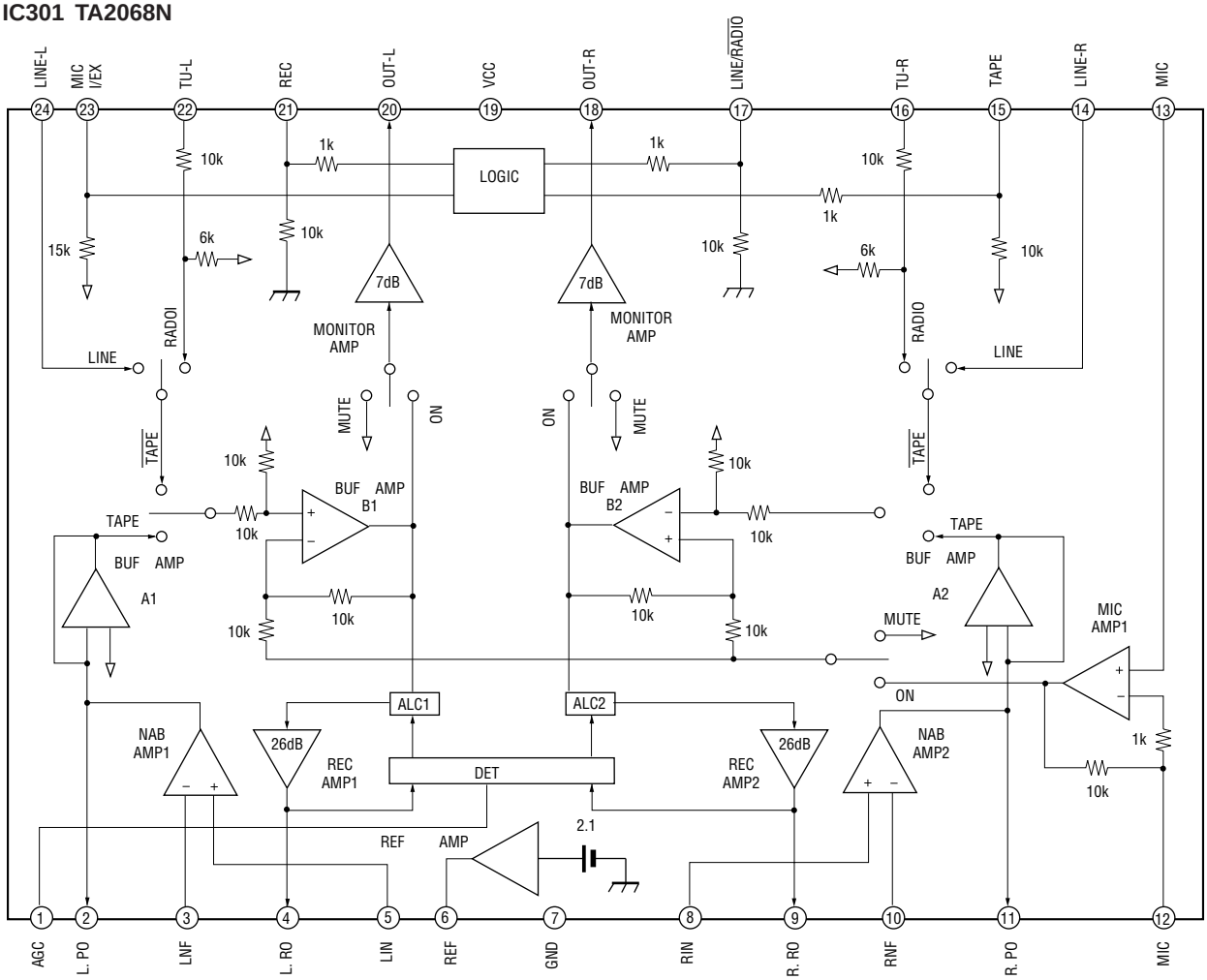
● **Waveforms (Tuner Section)**



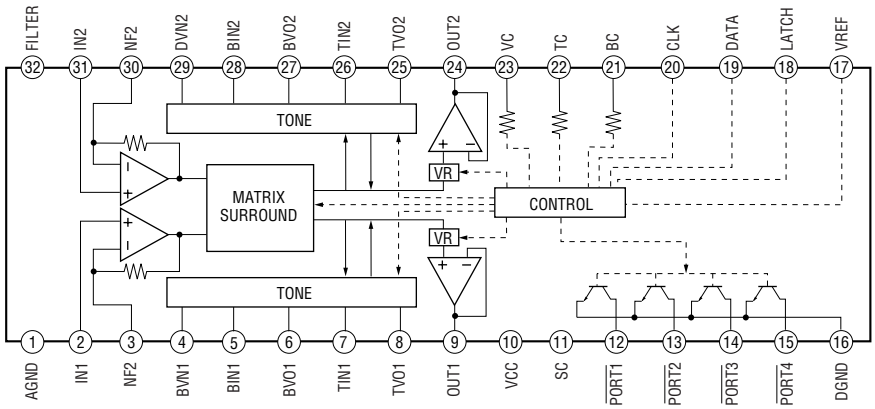
Note:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- ADJ : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  < > : MW
  [ ] : LW
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM

● **IC Block Diagrams (Main Section)**

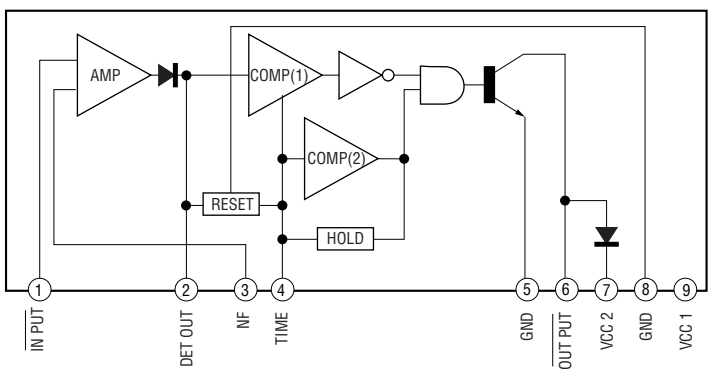
IC301 TA2068N



IC302 BH3854AS

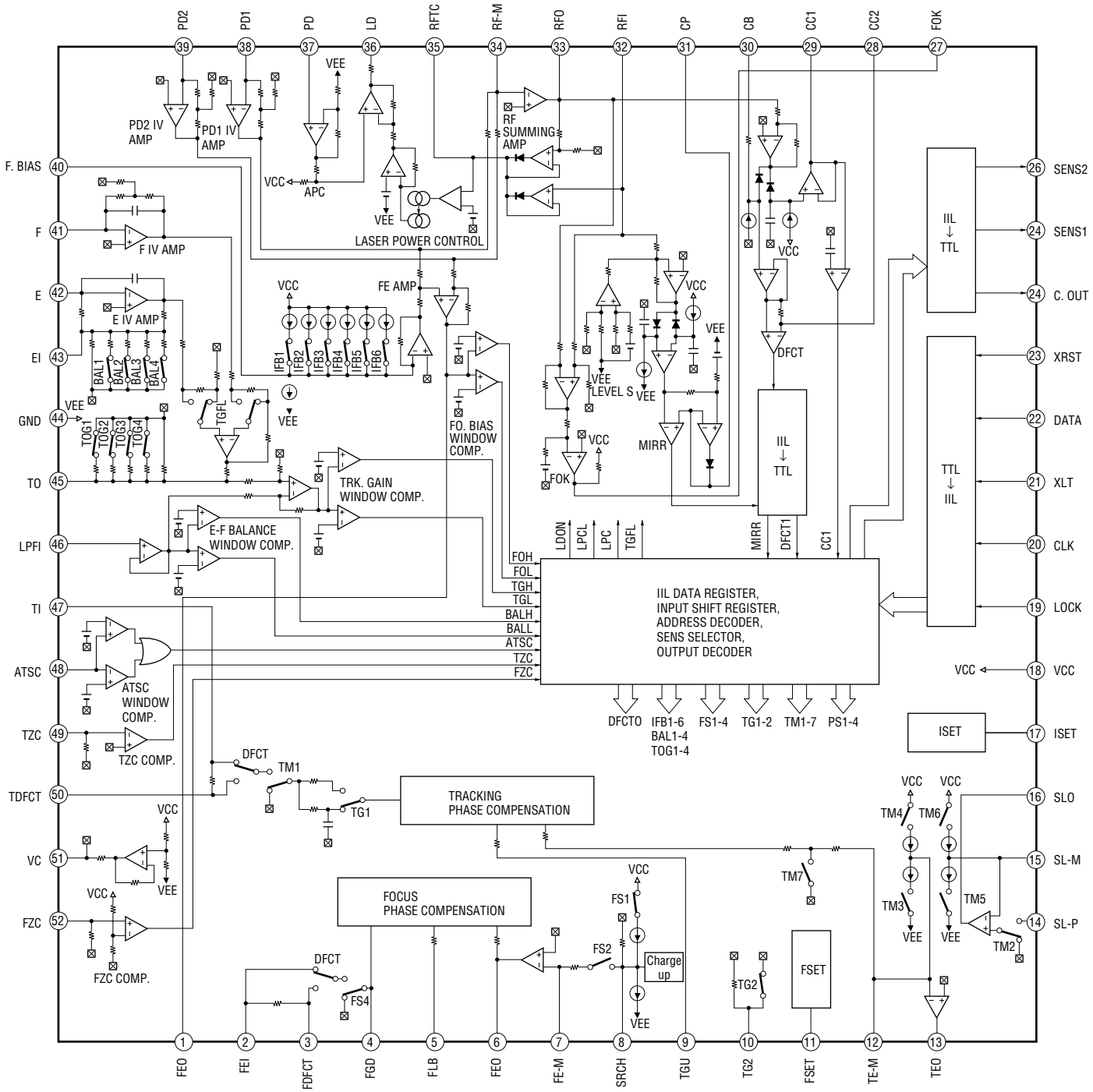


IC305 LA2010

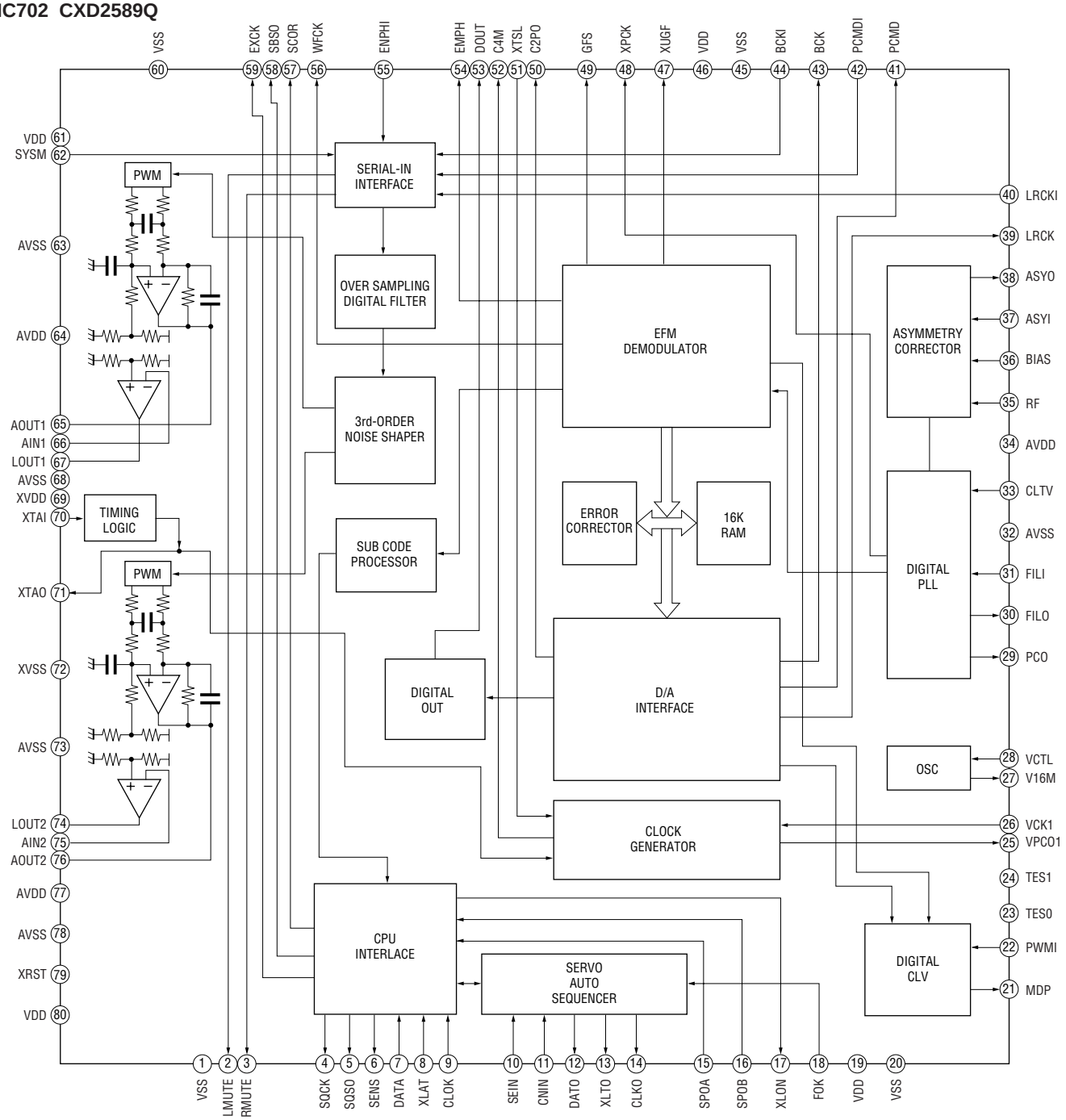


● **IC Block Diagrams (CD/System Section)**

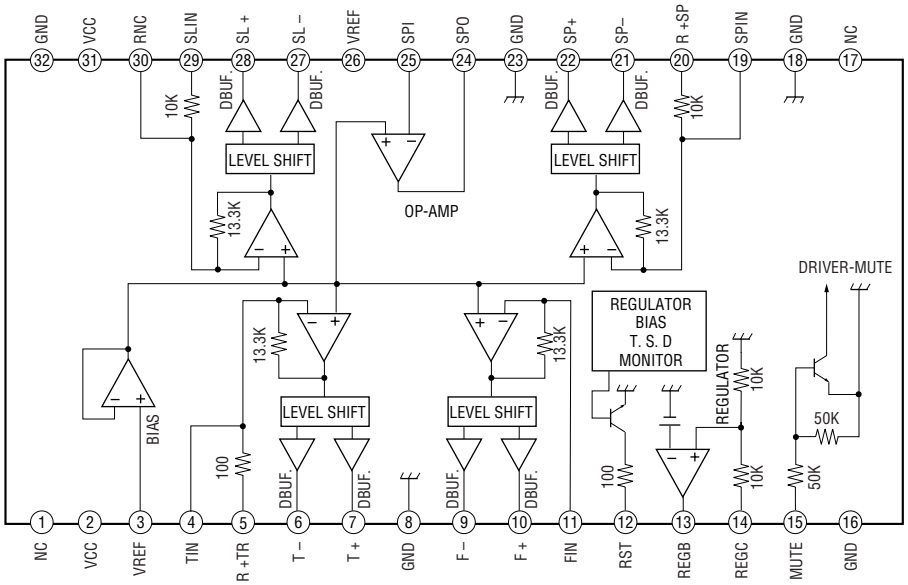
IC701 CXA1992BR



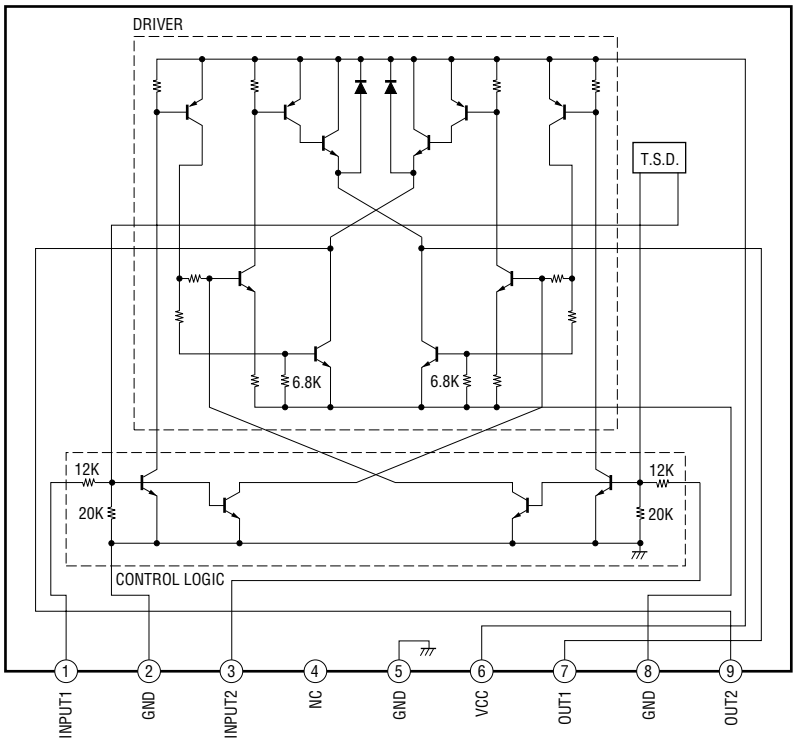
IC702 CXD2589Q



IC703 BA6898S

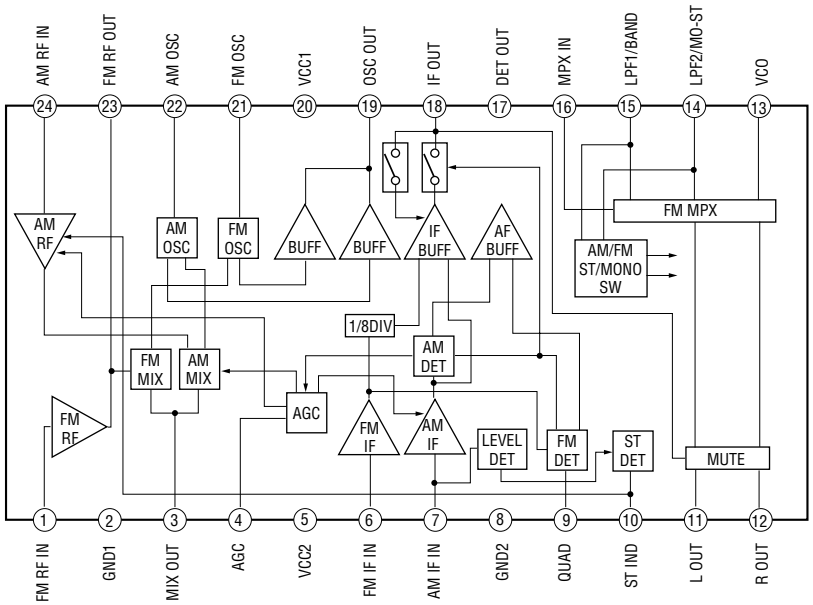


IC790 BA6418N

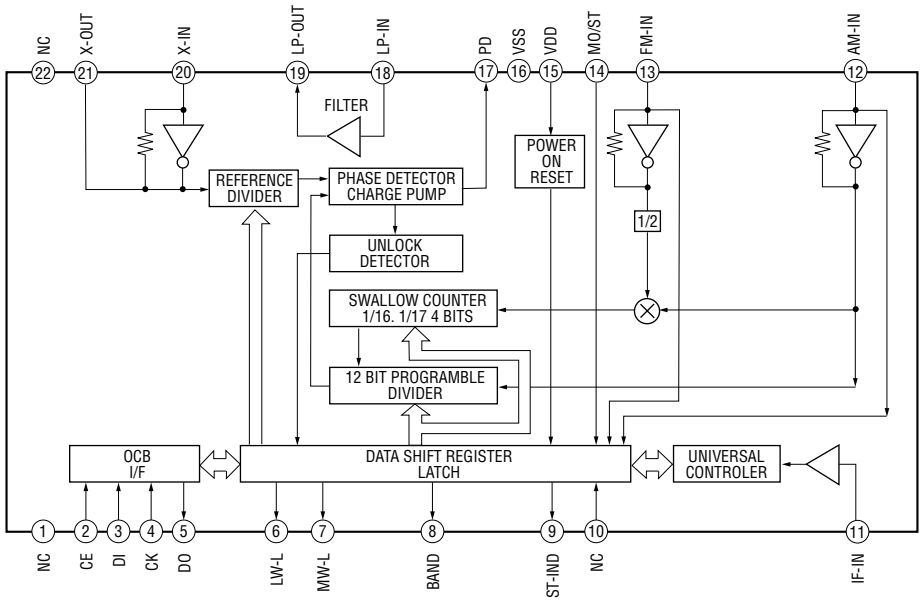


● **IC Block Diagrams (Tuner Section)**

IC1 TA2008AN



IC2 LC72137-D



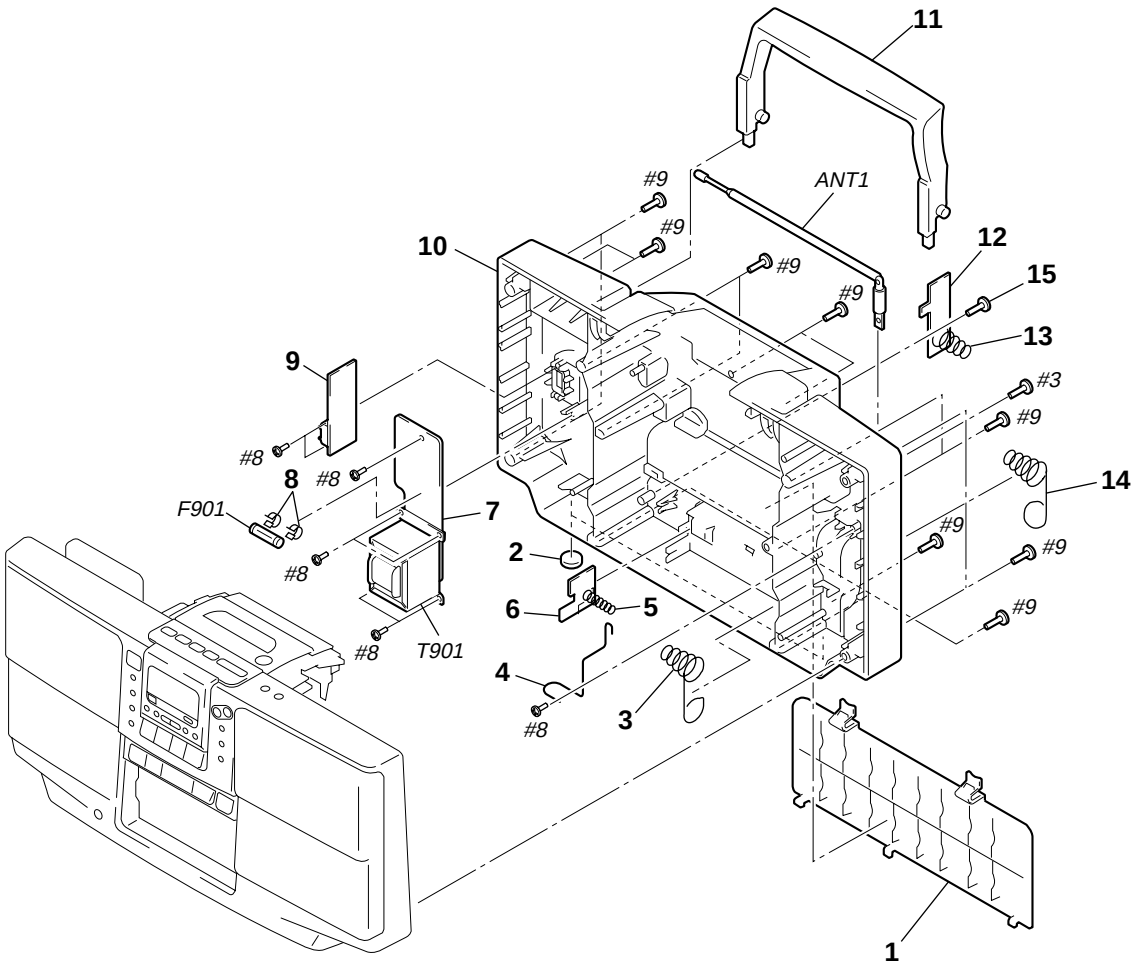
SECTION 7
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

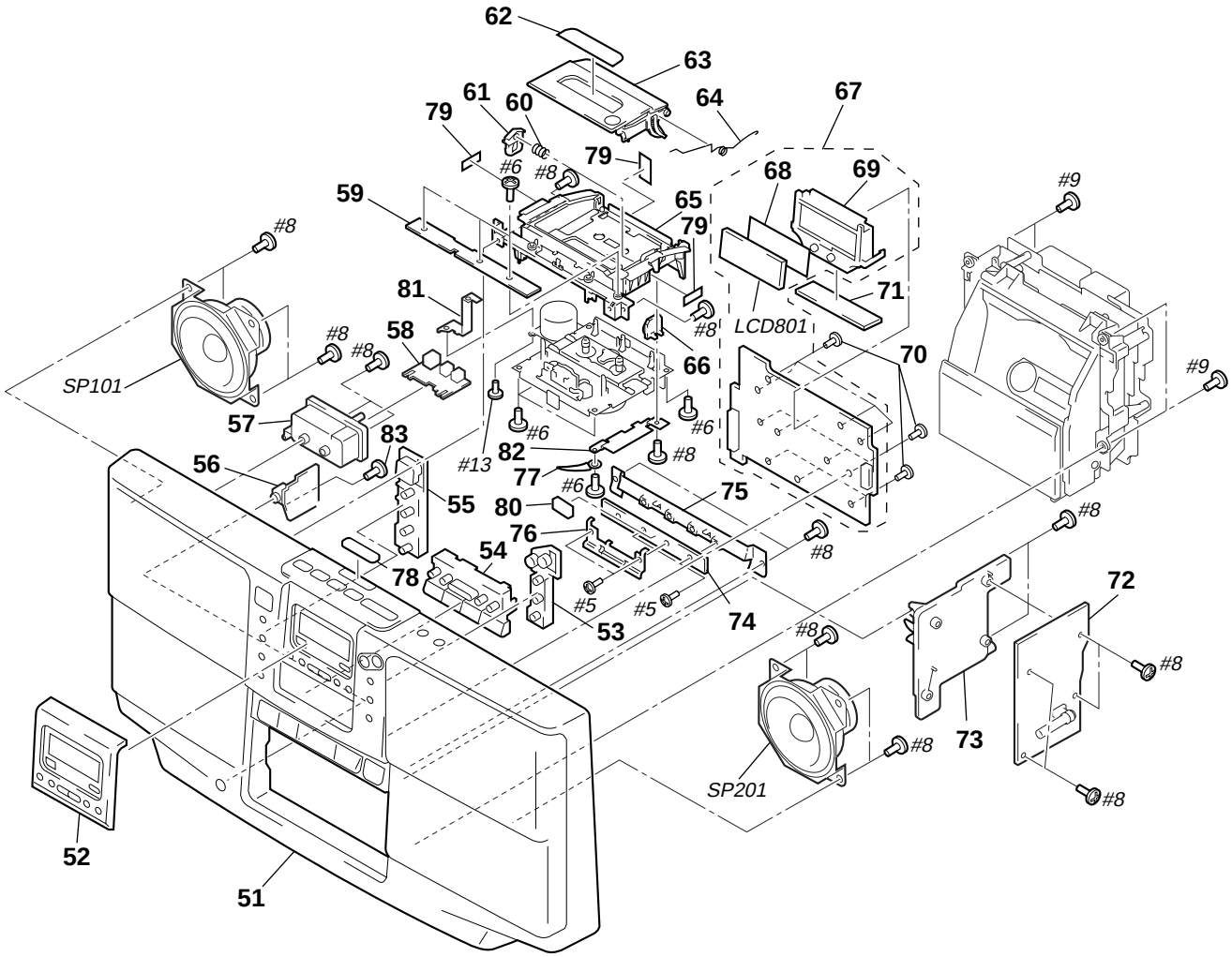
7-1. REAR CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-389-436-32	LID, BATTERY CASE	
2	3-908-999-01	FOOT	
3	3-028-598-01	SPRING (+.-) (S), BATTERY	
4	3-028-599-01	TERMINAL, ANTENNA	
5	3-028-596-01	SPRING (-) (S), BATTERY	
* 6	1-671-554-11	BATTERY (R) BOARD	
* 7	1-671-558-11	POWER BOARD	
8	1-533-233-31	HOLDER, FUSE	
* 9	1-671-559-11	INLET BOARD	
10	3-028-594-21	CABINET, REAR	

Ref. No.	Part No.	Description	Remark
11	3-028-600-01	HANDLE	
* 12	1-671-553-11	BATTERY (L) BOARD	
13	3-028-595-01	SPRING (-) (L), BATTERY	
14	3-028-597-01	SPRING (+.-) (L), BATTERY	
15	4-981-789-01	BRACKET (2), YOKE	
ANT1	1-754-055-11	ANTENNA, TELESCOPIC	
⚠F901	1-532-505-31	FUSE, TIME LAG (T5AL/250V)	
⚠T901	1-433-456-11	TRANSFORMER, POWER	

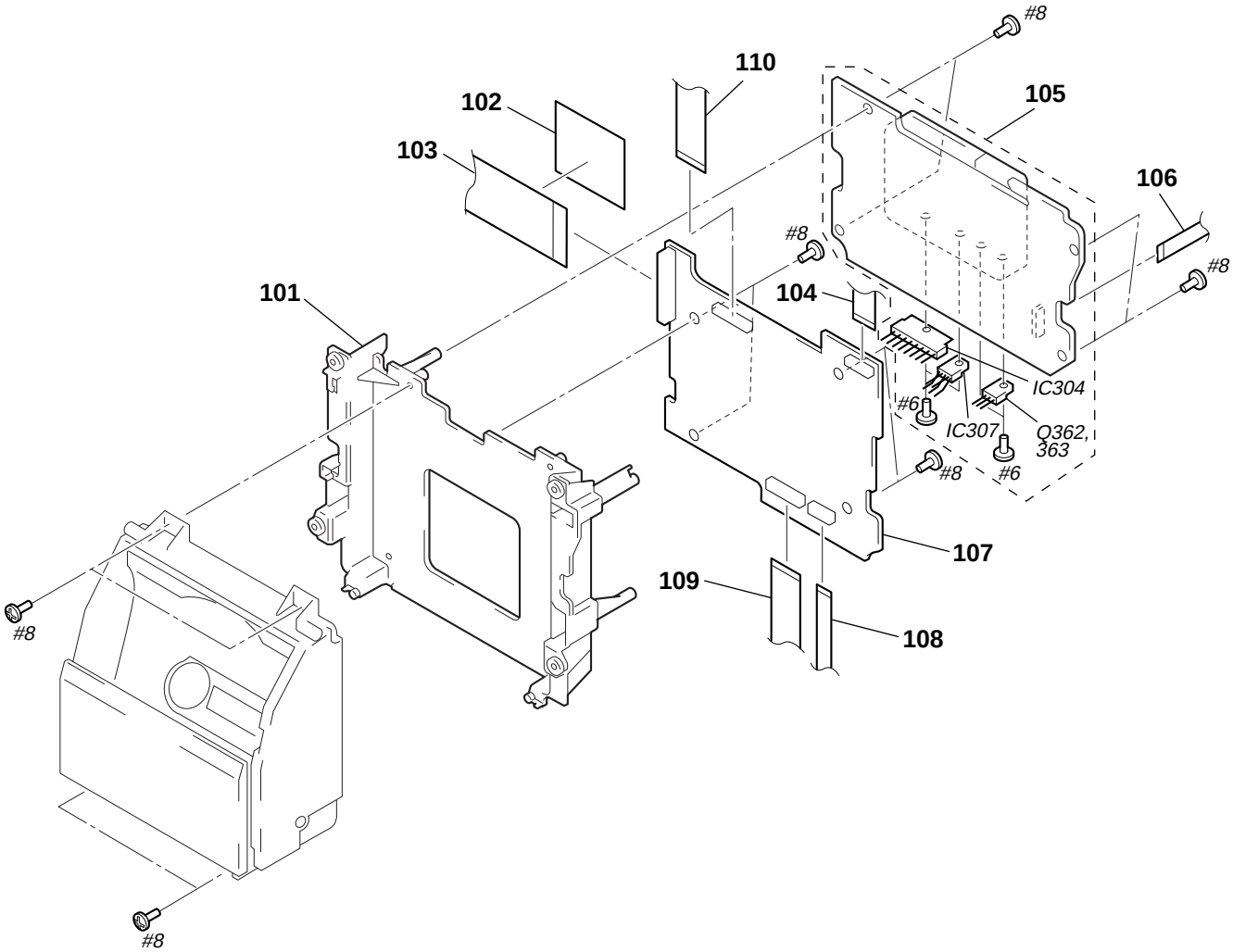
7-2. FRONT CABINET SECTION



Ref. No.	Part No.	Description	Remark
51	X-3376-967-1	CABINET SUB ASSY, FRONT	
52	3-028-604-11	WINDOW, LCD	
53	3-028-611-01	BUTTON, VOLUME	
54	3-028-613-11	BUTTON, FUNCTION	
55	3-028-610-01	BUTTON, POWER	
* 56	1-671-552-11	HEADPHONE BOARD	
57	3-028-622-02	BRACKET, LINE	
* 58	1-671-556-11	LINE BOARD	
* 59	1-671-550-11	SWITCH (1) BOARD	
60	3-029-159-01	SPRING, PUSH CATCHER RETURN	
61	3-029-158-01	CATCHER, PUSH	
62	3-028-602-01	WINDOW, CASSETTE	
63	3-028-601-11	HOLDER, CASSETTE	
64	3-028-603-01	SPRING, CASSETTE OPEN	
65	3-028-593-02	CABINET, UPPER	
66	3-922-112-31	DAMPER	
* 67	A-3321-808-A	LCD BOARD, COMPLETE	
68	3-028-618-02	ILLUMINATOR	
69	3-028-617-01	HOLDER, LCD	

Ref. No.	Part No.	Description	Remark
70	4-951-620-11	SCREW (2.6X10), +BVTP	
* 71	1-671-555-11	LAMP BOARD	
* 72	A-3321-811-A	TUNER BOARD, COMPLETE	
73	3-028-621-01	BRACKET, TUNER	
* 74	1-671-551-11	SWITCH (2) BOARD	
75	3-028-615-01	BRACKET, CD BUTTON	
76	3-031-094-02	BRACKET (2), CD	
77	3-703-397-01	STOPPER, WIRING	
78	3-028-605-01	WINDOW, AZIMUTH	
79	3-831-441-99	CUSHION (A)	
80	3-831-441-11	CUSHION (B)	
* 81	3-032-990-01	BRACKET, MD	
82	3-031-956-01	PLATE, UPPER	
83	4-981-789-01	BRACKET (2), YOKE	
LCD801	1-803-232-11	DISPLAY PANEL, LIQUID CRYSTAL	
SP101	1-505-742-11	SPEAKER (8cm) (L-CH)	
SP201	1-505-742-11	SPEAKER (8cm) (R-CH)	

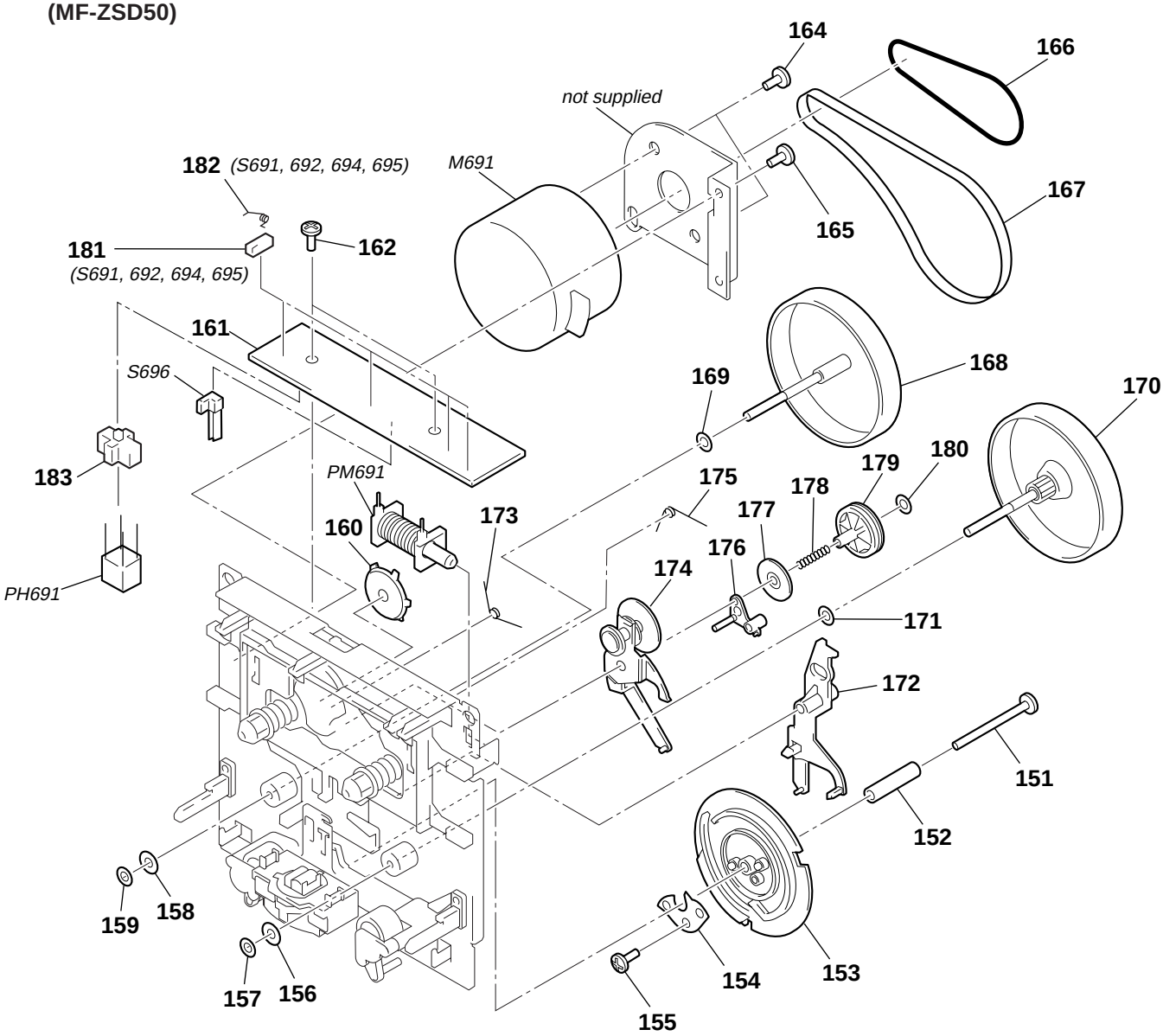
7-3. CD BLOCK SECTION



Ref. No.	Part No.	Description	Remark
101	3-028-619-01	BRACKET, CD	
102	3-028-649-01	PAPER, SHIELD	
103	1-783-993-11	WIRE, PARALLEL (FFC) (30 CORE)	
104	1-783-994-11	WIRE, PARALLEL (FFC) (13 CORE)	
* 105	A-3321-813-A	MAIN BOARD, COMPLETE	
106	1-783-990-11	WIRE, PARALLEL (FFC) (10 CORE)	
* 107	A-3321-812-A	CD/SYSTEM BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
108	1-783-991-11	WIRE, PARALLEL (FFC) (12 CORE)	
109	1-783-992-11	WIRE, PARALLEL (FFC) (20 CORE)	
110	1-782-663-11	WIRE (FLAT TYPE) (21CORE)	
IC304	8-759-426-51	IC BA5417	
IC307	8-759-564-82	IC BA09ST-V5	
Q362	8-729-209-15	TRANSISTOR 2SD2012	
Q363	8-729-209-15	TRANSISTOR 2SD2012	

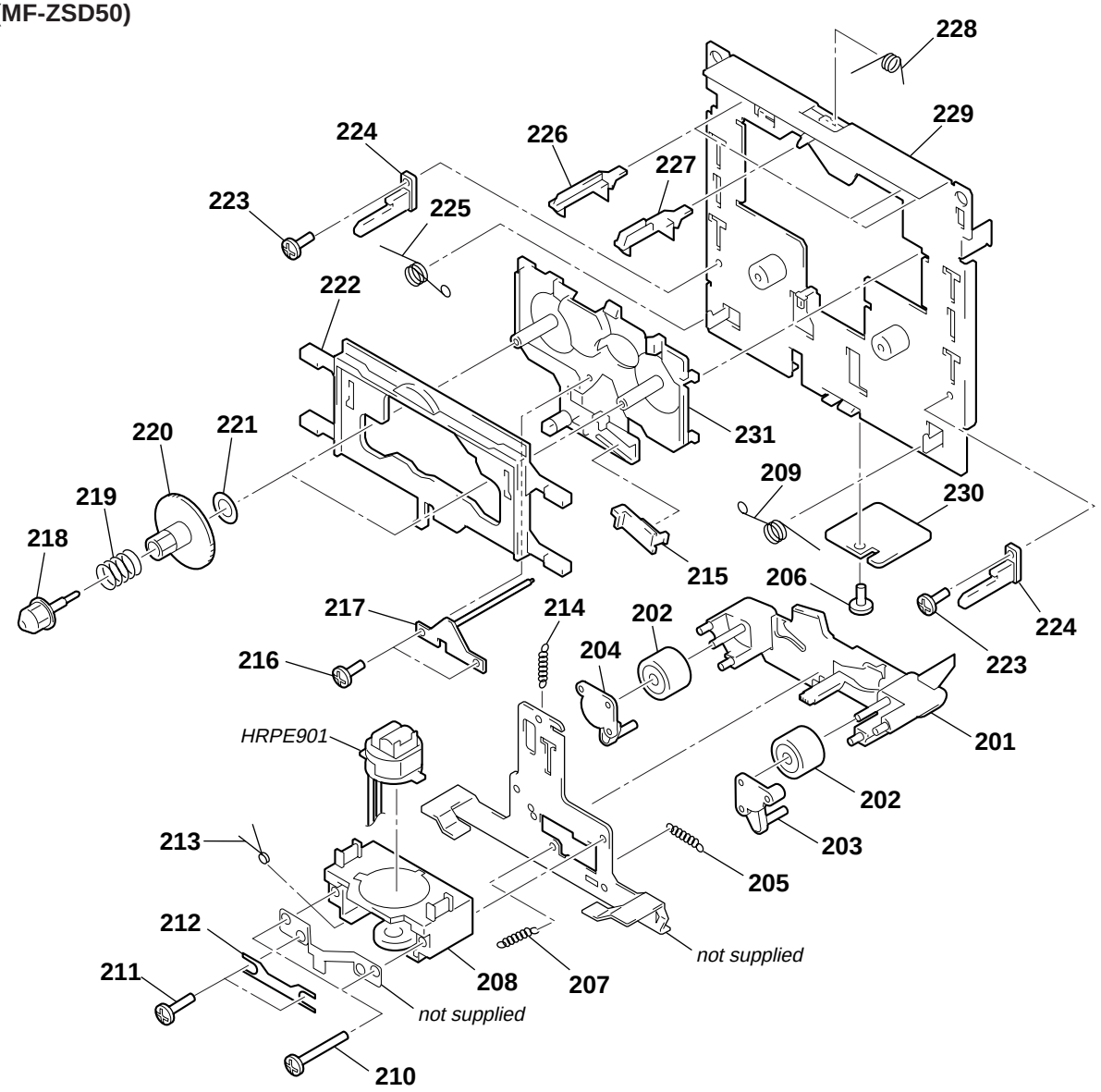
7-4. MECHANISM DECK SECTION-1
(MF-ZSD50)



Ref. No.	Part No.	Description	Remark
151	3-029-619-01	SCREW	
152	3-029-591-01	COLLAR	
153	3-029-590-01	CAM, GEAR	
154	3-034-597-01	CAM, ARM	
155	3-704-418-14	SCREW (M1.7X4), TAPPING	
156	3-029-623-01	WASHER	
157	3-029-622-01	WASHER	
158	3-029-621-01	WASHER	
159	3-029-620-01	WASHER	
160	3-029-587-01	COVER	
* 161	1-673-338-11	TC RF BOARD	
162	3-938-944-01	SCREW (D)	
164	3-029-618-01	SCREW	
165	3-029-614-01	SCREW	
166	3-029-599-01	BELT (FR)	
167	3-029-598-01	BELT (BR)	
168	3-029-588-01	FLYWHEEL (L)	
169	3-029-625-01	WASHER	
170	3-029-592-01	FLYWHEEL (R)	

Ref. No.	Part No.	Description	Remark
171	3-029-626-01	WASHER	
172	3-029-589-01	TRIGGER, ARM	
173	3-029-611-01	SPRING	
174	3-029-593-01	CLUTCH	
175	3-029-612-01	SPRING	
176	3-029-594-01	ARM (UD B)	
177	3-029-595-01	GEAR (UD)	
178	3-029-613-01	SPRING	
179	3-029-596-01	PULLEY (D)	
180	3-029-627-01	WASHER	
181	3-034-694-01	BOX (SW) (S691, 692, 694, 695)	
182	3-034-693-01	SPRING (SW) (S691, 692, 694, 695)	
183	3-029-600-01	SPACER	
M691	3-034-599-01	MOTOR ASSY (CAPSTAN/REEL) (INCLUDING PULLEY)	
PH691	8-729-021-62	PHOTO INTERRUPTOR SG-211	
PM691	1-454-896-11	SOLENOID, PLUNGER	
S696	1-771-661-11	SWITCH, LEAF (HEAD POSITION)	

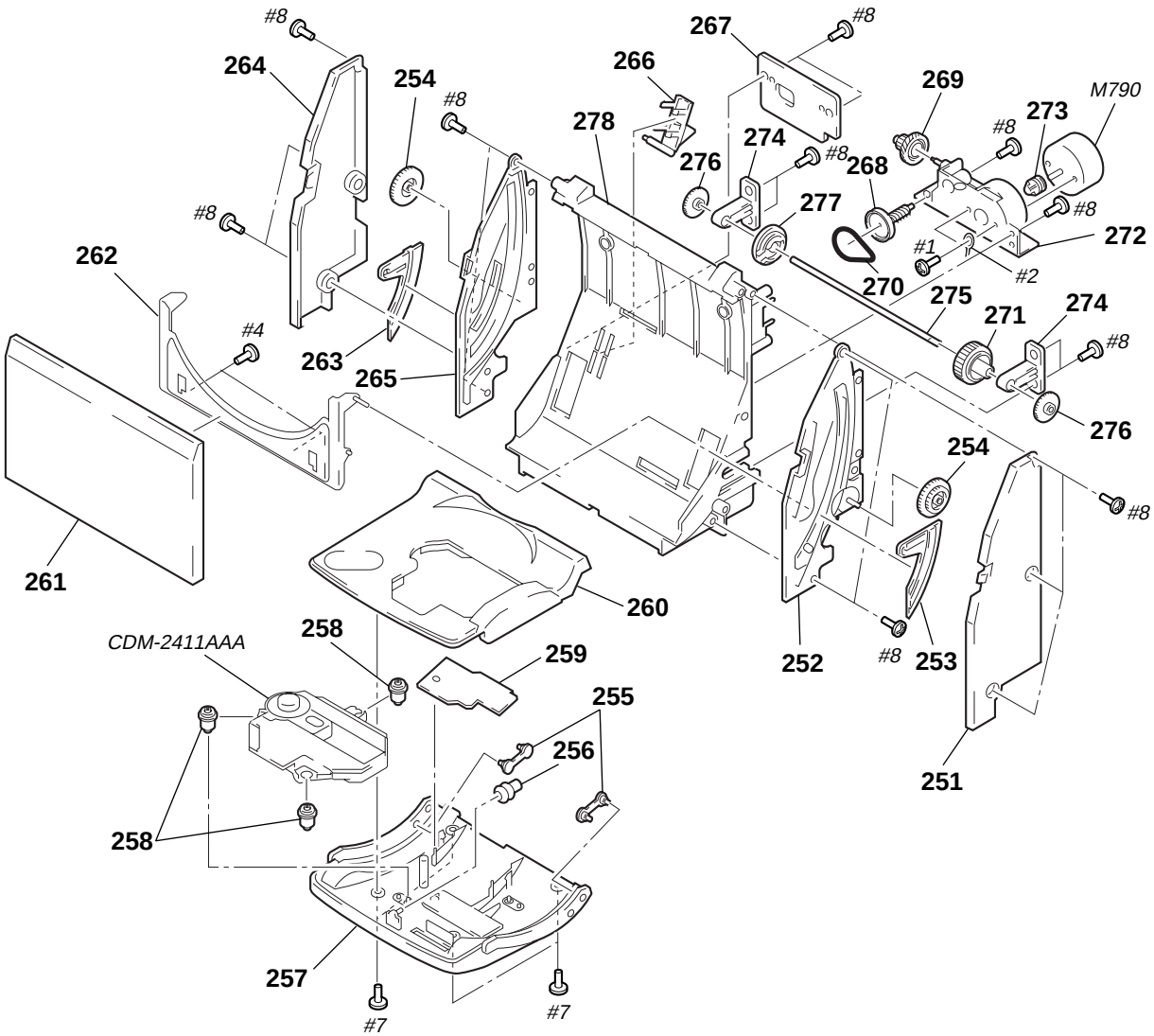
7-5. MECHANISM DECK SECTION-2
(MF-ZSD50)



Ref. No.	Part No.	Description	Remark
201	3-029-573-01	LEVER (HD)	
202	3-029-576-01	PINCH, ROLLER	
203	3-029-574-01	PINCH (R), CAP	
204	3-029-575-01	PINCH (L), CAP	
205	3-029-608-01	SPRING	
206	3-029-617-01	SCREW	
207	3-029-607-01	SPRING	
208	3-029-570-01	FRAME (HD)	
209	3-029-604-01	SPRING	
210	3-029-616-01	SCREW	
211	3-938-941-01	SCREW (A)	
212	3-034-598-01	SPRING, AZIMUTH	
213	3-029-606-01	SPRING	
214	3-029-609-01	SPRING	
215	3-029-580-01	LEVER (ST)	
216	3-029-614-01	SCREW	

Ref. No.	Part No.	Description	Remark
217	3-029-577-01	PLATE (D)	
218	3-029-578-01	REEL, CAP	
219	3-029-602-01	SPRING	
220	3-029-579-01	REEL, GEAR	
221	3-029-624-01	WASHER	
222	3-029-582-01	BRAKE, LEVER	
223	3-029-615-01	SCREW	
224	3-029-581-01	GUIDE (C)	
225	3-029-603-01	SPRING	
226	3-029-585-01	ARM (SW)	
227	3-029-584-01	ARM (CS)	
228	3-029-610-01	SPRING	
* 229	3-029-586-01	CHASSIS, MECHANISM	
* 230	1-673-339-11	HEAD RELAY BOARD	
231	3-029-583-01	FRAME (A)	
HRPE9011	500-601-11	HEAD, REC/PB (RECORD/PLAYBACK/ERASE)	

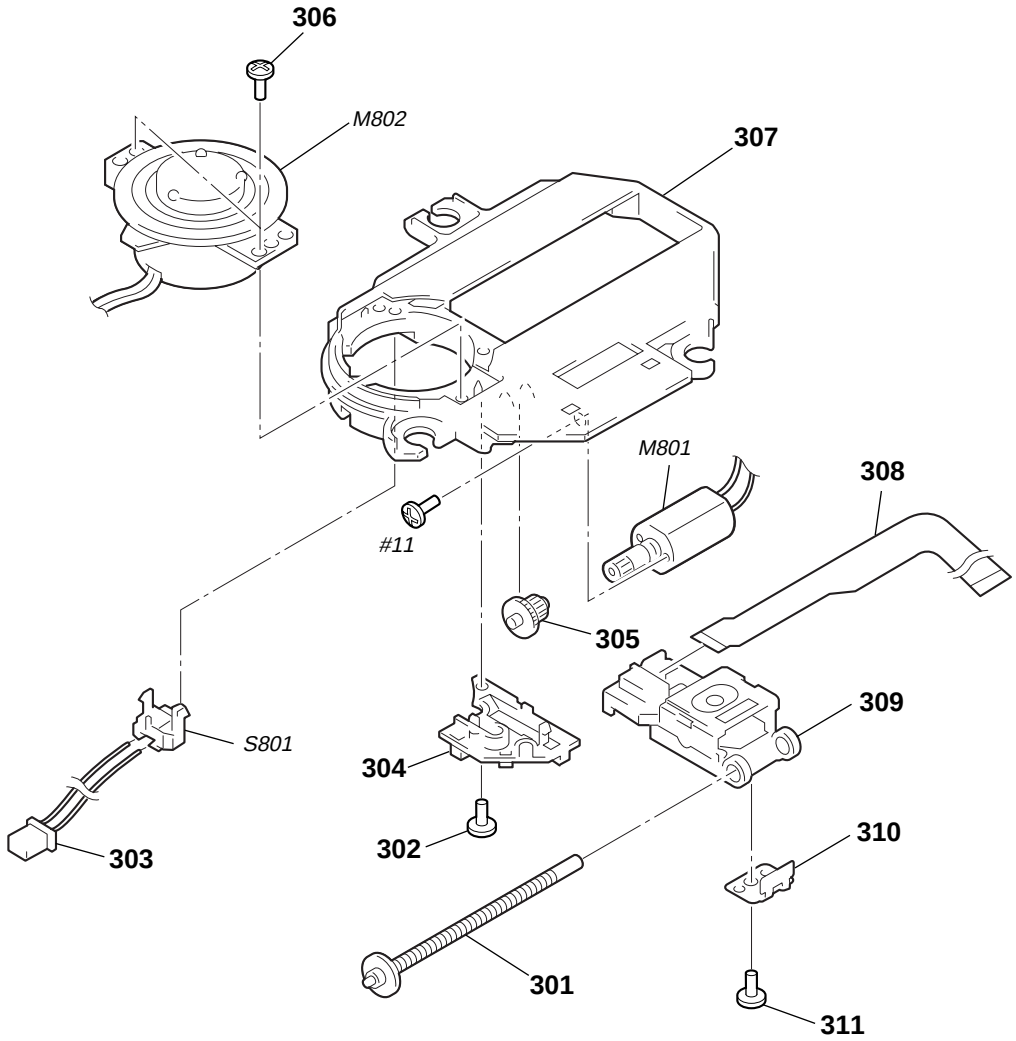
7-6. CD SECTION
(VLM-ZSD50-142)



Ref. No.	Part No.	Description	Remark
251	3-017-025-11	COVER (R), SIDE	
252	3-017-012-11	PLATE (R), SIDE	
253	3-017-014-11	SLIDER (R)	
254	3-017-027-11	GEAR (C)	
255	3-017-016-11	SHAFT, TRAY	
256	4-975-811-01	INSULATOR	
257	3-017-022-21	TRAY (BOTTOM), CD	
258	4-975-762-11	INSULATOR	
* 259	1-667-046-11	PICK-UP RELAY BOARD	
260	3-020-624-21	TRAY (TOP), CD	
261	3-028-620-01	LID, CD	
262	X-3374-204-1	WINDOW ASSY, CD	
263	3-017-013-11	SLIDER (L)	
264	3-017-035-11	COVER (L), SIDE	
265	3-017-011-11	PLATE (L), SIDE	

Ref. No.	Part No.	Description	Remark
266	3-017-017-11	LEVER, DETECTION	
* 267	1-667-045-11	LOADING BOARD	
268	3-017-031-11	GEAR (A)	
269	3-017-032-11	GEAR (B)	
270	3-017-030-01	BELT	
271	3-017-008-11	GEAR (R), TIMING	
272	3-017-036-11	CHASSIS, GEAR	
273	2-627-174-01	PULLEY (MOTOR)	
274	3-017-009-11	BEARING	
275	3-017-010-11	SHAFT	
276	3-017-028-11	GEAR (D)	
277	3-017-029-11	GEAR (L), TIMING	
278	3-017-024-21	CHASSIS, LOADING	
M790	1-698-999-11	MOTOR, DC (LOADING)	

7-7. OPTICAL PICK-UP SECTION (CDM-2411AAA)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
301	A-3303-970-A	SCREW ASSY, FEED	
302	3-318-203-11	SCREW (B1.7X6), TAPPING	
303	1-690-530-81	LEAD (WITH CONNECTOR)	
304	4-972-163-04	SPRING, SLED	
305	4-974-003-01	GEAR (B)	
306	3-719-401-11	SCREW (B1.7), TAPPING	
* 307	4-972-162-01	CHASSIS	

Ref. No.	Part No.	Description	Remark
308	1-660-965-11	SLIDE FLEXIBLE BOARD	
⚠309	X-4950-060-1	OPTICAL PICK-UP (DAX01A2 RP)	
310	4-972-165-01	RACK	
311	4-973-631-01	SCREW	
M801	A-3303-403-A	MOTOR ASSY (SLED) (INCLUDING GEAR)	
M802	A-3303-971-A	MOTOR ASSY, TURNTABLE (SPINDLE)	
S801	1-571-099-21	SWITCH (1 KEY) (LIMIT)	

SECTION 8
ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  IT : Italian
  EE : East European

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-671-553-11	BATTERY (L) BOARD			
		**********			
	3-028-595-01	SPRING (-) (L), BATTERY			
**********					
*	1-671-554-11	BATTERY (R) BOARD			
		**********			
	3-028-596-01	SPRING (-) (S), BATTERY			
		< CONNECTOR >			
* CN908	1-564-505-11	PLUG, CONNECTOR 2P			
**********					
*	A-3321-812-A	CD/SYSTEM BOARD, COMPLETE			
		**********			
	1-783-991-11	WIRE, PARALLEL (FFC) (12 CORE)			
	1-783-992-11	WIRE, PARALLEL (FFC) (20 CORE)			
		< CAPACITOR >			
C600	1-124-903-11	ELECT	1uF	20%	50V
C601	1-124-903-11	ELECT	1uF	20%	50V
C602	1-104-664-11	ELECT	47uF	20%	10V
C603	1-104-664-11	ELECT	47uF	20%	16V
C700	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C701	1-162-851-11	CERAMIC	0.1uF	10%	16V
C702	1-162-851-11	CERAMIC	0.1uF	10%	16V
C703	1-162-851-11	CERAMIC	0.1uF	10%	16V
C704	1-130-486-00	MYLAR	0.018uF	10%	50V
C705	1-131-375-00	TANTALUM	4.7uF	10%	10V
C706	1-130-489-00	MYLAR	0.033uF	5%	50V
C707	1-130-486-00	MYLAR	0.018uF	10%	50V
C708	1-162-282-31	CERAMIC	100PF	10%	50V
C710	1-126-961-11	ELECT	2.2uF	20%	50V
C711	1-130-487-00	MYLAR	0.022uF	5%	50V
C712	1-162-215-31	CERAMIC	47PF	5%	50V
C713	1-130-486-00	MYLAR	0.018uF	10%	50V
C721	1-130-493-00	MYLAR	0.068uF	5%	50V
C722	1-162-306-11	CERAMIC	0.01uF	30%	16V
C723	1-130-489-00	MYLAR	0.033uF	5%	50V
C724	1-130-495-00	MYLAR	0.1uF	5%	50V
C725	1-162-219-31	CERAMIC	68PF	5%	50V
C726	1-124-903-11	ELECT	1uF	20%	50V
C727	1-104-664-11	ELECT	47uF	20%	10V
C728	1-162-294-31	CERAMIC	0.001uF	10%	50V
C729	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C730	1-162-306-11	CERAMIC	0.01uF	30%	16V
C731	1-130-491-00	MYLAR	0.047uF	5%	50V
C732	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C733	1-101-005-00	CERAMIC	22000PF		50V
C734	1-162-851-11	CERAMIC	0.1uF	10%	16V
C735	1-104-666-11	ELECT	220uF	20%	10V
C736	1-162-851-11	CERAMIC	0.1uF	10%	16V
C737	1-162-851-11	CERAMIC	0.1uF	10%	16V
C738	1-162-851-11	CERAMIC	0.1uF	10%	16V
C740	1-162-306-11	CERAMIC	0.01uF	30%	16V
C741	1-104-664-11	ELECT	47uF	20%	10V
C742	1-162-306-11	CERAMIC	0.01uF	30%	16V
C743	1-124-443-00	ELECT	100uF	20%	10V
C750	1-162-306-11	CERAMIC	0.01uF	30%	16V
C751	1-124-902-00	ELECT	0.47uF	20%	50V
C752	1-104-664-11	ELECT	47uF	20%	10V
C753	1-104-664-11	ELECT	47uF	20%	10V
C754	1-162-306-11	CERAMIC	0.01uF	30%	16V
C755	1-130-483-00	MYLAR	0.01uF	5%	50V
C756	1-162-290-31	CERAMIC	470PF	10%	50V
C757	1-162-286-21	CERAMIC	220PF	10%	50V
C758	1-162-306-11	CERAMIC	0.01uF	30%	16V
C759	1-130-499-00	MYLAR	0.22uF	5%	50V
C760	1-126-963-11	ELECT	4.7uF	20%	50V
C761	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C762	1-162-306-11	CERAMIC	0.01uF	30%	16V
C763	1-162-306-11	CERAMIC	0.01uF	30%	16V
C764	1-162-282-31	CERAMIC	100PF	10%	50V
C765	1-162-199-31	CERAMIC	10PF	5%	50V
C766	1-162-199-31	CERAMIC	10PF	5%	50V
C767	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C768	1-162-306-11	CERAMIC	0.01uF	30%	16V
C769	1-162-306-11	CERAMIC	0.01uF	30%	16V
C770	1-126-963-11	ELECT	4.7uF	20%	50V
C771	1-162-306-11	CERAMIC	0.01uF	30%	16V
C772	1-126-940-11	ELECT	330uF	20%	10V
C773	1-162-306-11	CERAMIC	0.01uF	30%	16V
C774	1-162-306-11	CERAMIC	0.01uF	30%	16V
C775	1-162-306-11	CERAMIC	0.01uF	30%	16V

CD/SYSTEM

Ref. No.	Part No.	Description			Remark
C776	1-126-940-11	ELECT	330uF	20%	10V
C777	1-104-664-11	ELECT	47uF	20%	10V
C778	1-124-443-00	ELECT	100uF	20%	10V
C779	1-162-851-11	CERAMIC	0.1uF	10%	16V
C790	1-104-664-11	ELECT	47uF	20%	10V
C791	1-104-666-11	ELECT	220uF	20%	10V
C792	1-162-286-21	CERAMIC	220PF	10%	50V
C793	1-162-286-21	CERAMIC	220PF	10%	50V
C794	1-162-286-21	CERAMIC	220PF	10%	50V
C795	1-162-286-21	CERAMIC	220PF	10%	50V
C796	1-162-286-21	CERAMIC	220PF	10%	50V
C797	1-162-286-21	CERAMIC	220PF	10%	50V
C798	1-162-306-11	CERAMIC	0.01uF	30%	16V
C799	1-162-306-11	CERAMIC	0.01uF	30%	16V
C803	1-162-306-11	CERAMIC	0.01uF	30%	16V
C805	1-162-306-11	CERAMIC	0.01uF	30%	16V
C806	1-104-664-11	ELECT	47uF	20%	10V
C807	1-124-907-11	ELECT	10uF	20%	50V
C808	1-102-514-11	CERAMIC	22PF	5%	50V
C809	1-102-516-11	CERAMIC	27PF	5%	50V
C810	1-162-288-31	CERAMIC	330PF	10%	50V
C811	1-162-288-31	CERAMIC	330PF	10%	50V
C812	1-102-514-11	CERAMIC	22PF	5%	50V
C813	1-102-514-11	CERAMIC	22PF	5%	50V
C814	1-162-294-31	CERAMIC	0.001uF	10%	50V
C815	1-162-306-11	CERAMIC	0.01uF	30%	16V
C817	1-162-306-11	CERAMIC	0.01uF	30%	16V
C818	1-162-306-11	CERAMIC	0.01uF	30%	16V
C819	1-102-960-00	CERAMIC	24PF	5%	50V
C820	1-102-960-00	CERAMIC	24PF	5%	50V
C821	1-104-664-11	ELECT	47uF	20%	10V
C822	1-162-294-31	CERAMIC	0.001uF	10%	50V
C823	1-162-294-31	CERAMIC	0.001uF	10%	50V
C824	1-162-294-31	CERAMIC	0.001uF	10%	50V
C825	1-162-306-11	CERAMIC	0.01uF	30%	16V
C826	1-162-294-31	CERAMIC	0.001uF	10%	50V
C829	1-162-294-31	CERAMIC	0.001uF	10%	50V
C831	1-162-282-31	CERAMIC	100PF	10%	50V
C832	1-162-282-31	CERAMIC	100PF	10%	50V
C833	1-162-282-31	CERAMIC	100PF	10%	50V
C835	1-162-282-31	CERAMIC	100PF	10%	50V
C836	1-162-282-31	CERAMIC	100PF	10%	50V
C837	1-104-664-11	ELECT	47uF	20%	10V
C838	1-162-306-11	CERAMIC	0.01uF	30%	16V
C840	1-162-306-11	CERAMIC	0.01uF	30%	16V
C841	1-162-306-11	CERAMIC	0.01uF	30%	16V
		< CONNECTOR >			
CN701	1-770-528-31	CONNECTOR, FFC/FPC 21P			
CN708	1-691-071-31	HOUSING, CONNECTOR 12P			
CN709	1-691-079-31	HOUSING, CONNECTOR 20P			
* CN710	1-580-170-11	PIN, CONNECTOR (PC BOARD) 9P			
* CN711	1-580-166-11	PIN, CONNECTOR (PC BOARD) 5P			
CN801	1-770-537-31	CONNECTOR, FFC/FPC 30P			
CN803	1-695-374-31	CONNECTOR, FFC/FPC 13P			

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D601	8-719-991-33	DIODE 1SS133T-77			
D602	8-719-991-33	DIODE 1SS133T-77			
D603	8-719-991-33	DIODE 1SS133T-77			
D701	8-719-991-33	DIODE 1SS133T-77			
D801	8-719-991-33	DIODE 1SS133T-77			
D802	8-719-991-33	DIODE 1SS133T-77			
D803	8-719-991-33	DIODE 1SS133T-77			
D804	8-719-991-33	DIODE 1SS133T-77			
D805	8-719-991-33	DIODE 1SS133T-77			
D806	8-719-991-33	DIODE 1SS133T-77			
D807	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC701	8-752-082-14	IC CXA1992BR			
IC702	8-752-384-13	IC CXD2589Q			
IC703	8-759-478-60	IC BA6898S			
IC801	8-752-901-80	IC CXP83232A-010Q			
IC803	8-759-430-16	IC PST600I			
		< COIL >			
JW101	1-414-142-11	INDUCTOR 1uH			
L601	1-408-117-00	INDUCTOR 10uH			
L602	1-414-142-11	INDUCTOR 1uH			
L702	1-410-324-11	INDUCTOR 4.7uH			
L801	1-410-509-11	INDUCTOR 10uH			
L802	1-410-509-11	INDUCTOR 10uH			
L804	1-414-142-11	INDUCTOR 1uH			
L805	1-414-142-11	INDUCTOR 1uH			
L806	1-410-509-11	INDUCTOR 10uH			
L807	1-410-509-11	INDUCTOR 10uH			
L808	1-410-509-11	INDUCTOR 10uH			
L809	1-410-509-11	INDUCTOR 10uH			
L810	1-410-509-11	INDUCTOR 10uH			
L811	1-410-509-11	INDUCTOR 10uH			
		< TRANSISTOR >			
Q601	8-729-036-86	TRANSISTOR KTC3203Y-AT			
Q602	8-729-036-58	TRANSISTOR KRC102M-AT			
Q603	8-729-036-77	TRANSISTOR KRC107M			
Q604	8-729-801-84	TRANSISTOR 2SB1013-4			
Q701	8-729-037-02	TRANSISTOR KTA1266Y-AT			
Q702	8-729-036-58	TRANSISTOR KRC102M-AT			
Q703	8-729-801-84	TRANSISTOR 2SB1013-4			
Q704	8-729-036-86	TRANSISTOR KTC3203Y-AT			
Q705	8-729-036-86	TRANSISTOR KTC3203Y-AT			
Q803	8-729-922-66	TRANSISTOR 2SC2410SN			
Q804	8-729-922-66	TRANSISTOR 2SC2410SN			
Q805	8-729-029-49	TRANSISTOR DTA143TSA-TP			
		< RESISTOR >			
R500	1-249-417-11	CARBON	1K	5%	1/4W
R501	1-249-417-11	CARBON	1K	5%	1/4W
R510	1-249-429-11	CARBON	10K	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R513	1-249-429-11	CARBON	10K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W
R515	1-249-429-11	CARBON	10K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-429-11	CARBON	10K	5%	1/4W
R518	1-249-429-11	CARBON	10K	5%	1/4W
R519	1-249-429-11	CARBON	10K	5%	1/4W
R520	1-249-429-11	CARBON	10K	5%	1/4W
R521	1-249-429-11	CARBON	10K	5%	1/4W
R522	1-249-429-11	CARBON	10K	5%	1/4W
R523	1-249-429-11	CARBON	10K	5%	1/4W
R524	1-249-429-11	CARBON	10K	5%	1/4W
R525	1-249-429-11	CARBON	10K	5%	1/4W
R526	1-249-429-11	CARBON	10K	5%	1/4W
R527	1-249-429-11	CARBON	10K	5%	1/4W
R528	1-249-429-11	CARBON	10K	5%	1/4W
R529	1-249-429-11	CARBON	10K	5%	1/4W
R530	1-249-429-11	CARBON	10K	5%	1/4W
R531	1-249-429-11	CARBON	10K	5%	1/4W
R532	1-249-429-11	CARBON	10K	5%	1/4W
R533	1-249-429-11	CARBON	10K	5%	1/4W
R534	1-249-429-11	CARBON	10K	5%	1/4W
R535	1-249-429-11	CARBON	10K	5%	1/4W
R536	1-249-429-11	CARBON	10K	5%	1/4W
R537	1-249-429-11	CARBON	10K	5%	1/4W
R538	1-249-429-11	CARBON	10K	5%	1/4W
R539	1-249-429-11	CARBON	10K	5%	1/4W
R540	1-249-417-11	CARBON	1K	5%	1/4W
R601	1-249-413-11	CARBON	470	5%	1/4W
R602	1-249-441-11	CARBON	100K	5%	1/4W
R603	1-249-441-11	CARBON	100K	5%	1/4W
R604	1-249-435-11	CARBON	33K	5%	1/4W
R605	1-249-421-11	CARBON	2.2K	5%	1/4W
R606	1-249-421-11	CARBON	2.2K	5%	1/4W
R607	1-249-421-11	CARBON	2.2K	5%	1/4W
R608	1-249-441-11	CARBON	100K	5%	1/4W
R609	1-249-421-11	CARBON	2.2K	5%	1/4W
R610	1-249-417-11	CARBON	1K	5%	1/4W
R611	1-249-417-11	CARBON	1K	5%	1/4W
R612	1-249-425-11	CARBON	4.7K	5%	1/4W
R700	1-249-437-11	CARBON	47K	5%	1/4W
R701	1-249-427-11	CARBON	6.8K	5%	1/4W
R702	1-247-899-11	CARBON	680K	5%	1/4W
R703	1-247-883-00	CARBON	150K	5%	1/4W
R704	1-247-891-00	CARBON	330K	5%	1/4W
R705	1-247-896-11	CARBON	510K	5%	1/4W
R706	1-247-883-00	CARBON	150K	5%	1/4W
R708	1-247-887-00	CARBON	220K	5%	1/4W
R709	1-249-437-11	CARBON	47K	5%	1/4W
R710	1-249-435-11	CARBON	33K	5%	1/4W
R711	1-249-441-11	CARBON	100K	5%	1/4W
R712	1-247-883-00	CARBON	150K	5%	1/4W
R713	1-249-417-11	CARBON	1K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W
R715	1-249-417-11	CARBON	1K	5%	1/4W
R716	1-247-883-00	CARBON	150K	5%	1/4W
R717	1-247-863-91	CARBON	22K	5%	1/4W
R718	1-249-425-11	CARBON	4.7K	5%	1/4W
R719	1-247-903-00	CARBON	1M	5%	1/4W
R720	1-249-425-11	CARBON	4.7K	5%	1/4W
R721	1-247-843-11	CARBON	3.3K	5%	1/4W
R722	1-247-903-00	CARBON	1M	5%	1/4W
R723	1-247-843-11	CARBON	3.3K	5%	1/4W
R724	1-249-393-11	CARBON	10	5%	1/4W
R725	1-249-437-11	CARBON	47K	5%	1/4W
R726	1-249-437-11	CARBON	47K	5%	1/4W
R727	1-249-437-11	CARBON	47K	5%	1/4W
R728	1-249-437-11	CARBON	47K	5%	1/4W
R729	1-247-883-00	CARBON	150K	5%	1/4W
R730	1-247-883-00	CARBON	150K	5%	1/4W
R731	1-247-887-00	CARBON	220K	5%	1/4W
R732	1-247-883-00	CARBON	150K	5%	1/4W
R733	1-247-891-00	CARBON	330K	5%	1/4W
R734	1-247-883-00	CARBON	150K	5%	1/4W
R735	1-247-885-00	CARBON	180K	5%	1/4W
R739	1-249-429-11	CARBON	10K	5%	1/4W
R740	1-249-437-11	CARBON	47K	5%	1/4W
R741	1-249-437-11	CARBON	47K	5%	1/4W
R742	1-247-843-11	CARBON	3.3K	5%	1/4W
R743	1-249-417-11	CARBON	1K	5%	1/4W
R744	1-249-429-11	CARBON	10K	5%	1/4W
R745	1-247-903-00	CARBON	1M	5%	1/4W
R746	1-249-429-11	CARBON	10K	5%	1/4W
R747	1-247-887-00	CARBON	220K	5%	1/4W
R748	1-249-413-11	CARBON	470	5%	1/4W
R749	1-249-417-11	CARBON	1K	5%	1/4W
R750	1-249-437-11	CARBON	47K	5%	1/4W
R752	1-249-431-11	CARBON	15K	5%	1/4W
R753	1-249-427-11	CARBON	6.8K	5%	1/4W
R754	1-249-428-11	CARBON	8.2K	5%	1/4W
R755	1-249-435-11	CARBON	33K	5%	1/4W
R756	1-247-863-91	CARBON	22K	5%	1/4W
R757	1-247-863-91	CARBON	22K	5%	1/4W
R758	1-249-427-11	CARBON	6.8K	5%	1/4W
R759	1-249-437-11	CARBON	47K	5%	1/4W
R760	1-249-437-11	CARBON	47K	5%	1/4W
R761	1-249-417-11	CARBON	1K	5%	1/4W
R771	1-249-417-11	CARBON	1K	5%	1/4W
R790	1-249-425-11	CARBON	4.7K	5%	1/4W
R791	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-249-421-11	CARBON	2.2K	5%	1/4W
R802	1-247-807-31	CARBON	100	5%	1/4W
R803	1-249-417-11	CARBON	1K	5%	1/4W
R804	1-249-417-11	CARBON	1K	5%	1/4W
R805	1-249-417-11	CARBON	1K	5%	1/4W
R806	1-249-417-11	CARBON	1K	5%	1/4W
R807	1-249-417-11	CARBON	1K	5%	1/4W
R808	1-249-417-11	CARBON	1K	5%	1/4W
R809	1-249-425-11	CARBON	4.7K	5%	1/4W
R810	1-249-425-11	CARBON	4.7K	5%	1/4W
R811	1-249-417-11	CARBON	1K	5%	1/4W
R812	1-249-425-11	CARBON	4.7K	5%	1/4W
R813	1-249-417-11	CARBON	1K	5%	1/4W
R814	1-249-437-11	CARBON	47K	5%	1/4W
R815	1-249-417-11	CARBON	1K	5%	1/4W

CD/SYSTEM | HEADPHONE | HEAD RELAY | INLET

Ref. No.	Part No.	Description			Remark
R816	1-249-417-11	CARBON	1K	5%	1/4W
R817	1-249-417-11	CARBON	1K	5%	1/4W
R818	1-249-417-11	CARBON	1K	5%	1/4W
R819	1-249-417-11	CARBON	1K	5%	1/4W
R820	1-249-417-11	CARBON	1K	5%	1/4W
R821	1-249-417-11	CARBON	1K	5%	1/4W
R822	1-249-417-11	CARBON	1K	5%	1/4W
R823	1-249-417-11	CARBON	1K	5%	1/4W
R824	1-249-417-11	CARBON	1K	5%	1/4W
R826	1-249-425-11	CARBON	4.7K	5%	1/4W
R827	1-249-425-11	CARBON	4.7K	5%	1/4W
R828	1-249-425-11	CARBON	4.7K	5%	1/4W
R829	1-249-417-11	CARBON	1K	5%	1/4W
R830	1-249-417-11	CARBON	1K	5%	1/4W
R831	1-249-417-11	CARBON	1K	5%	1/4W
R832	1-249-417-11	CARBON	1K	5%	1/4W
R833	1-249-417-11	CARBON	1K	5%	1/4W
R834	1-249-417-11	CARBON	1K	5%	1/4W
R835	1-249-417-11	CARBON	1K	5%	1/4W
R836	1-249-417-11	CARBON	1K	5%	1/4W
R837	1-249-417-11	CARBON	1K	5%	1/4W
R838	1-249-417-11	CARBON	1K	5%	1/4W
R840	1-249-417-11	CARBON	1K	5%	1/4W
R841	1-249-417-11	CARBON	1K	5%	1/4W
R842	1-249-417-11	CARBON	1K	5%	1/4W
R843	1-249-437-11	CARBON	47K	5%	1/4W
R844	1-249-417-11	CARBON	1K	5%	1/4W
R846	1-249-425-11	CARBON	4.7K	5%	1/4W
R847	1-247-885-00	CARBON	180K	5%	1/4W
R848	1-249-441-11	CARBON	100K	5%	1/4W
R849	1-247-883-00	CARBON	150K	5%	1/4W
R850	1-247-883-00	CARBON	150K	5%	1/4W
R851	1-249-413-11	CARBON	470	5%	1/4W
R852	1-249-429-11	CARBON	10K	5%	1/4W
R853	1-249-417-11	CARBON	1K	5%	1/4W
R887	1-249-437-11	CARBON	47K	5%	1/4W
R890	1-249-417-11	CARBON	1K	5%	1/4W
R891	1-249-437-11	CARBON	47K	5%	1/4W
R894	1-249-421-11	CARBON	2.2K	5%	1/4W
R895	1-247-895-91	CARBON	470K	5%	1/4W
R896	1-247-887-00	CARBON	220K	5%	1/4W
R897	1-249-417-11	CARBON	1K	5%	1/4W
R898	1-249-422-11	CARBON	2.7K	5%	1/4W
R899	1-249-425-11	CARBON	4.7K	5%	1/4W
		< VIBRATOR >			
X701	1-767-226-11	VIBRATOR, CRYSTAL (16.9344MHz)			
X801	1-767-184-11	VIBRATOR, CERAMIC (4.21MHz)			
X802	1-767-697-11	VIBRATOR, CRYSTAL (32.768kHz)			
**********					
*	1-671-552-11	HEADPHONE BOARD			
		**********			
		< CONNECTOR >			
* CN501	1-564-519-11	PLUG, CONNECTOR 4P			

Ref. No.	Part No.	Description			Remark
		< JACK >			
J501	1-566-891-11	JACK (🎧)			
		< RESISTOR >			
R150	1-249-404-00	CARBON	82	5%	1/4W
R250	1-249-404-00	CARBON	82	5%	1/4W
**********					
	1-673-339-11	HEAD RELAY BOARD			
		**********			
		< CONNECTOR >			
CN692	1-580-167-11	PIN, CONNECTOR (PC BOARD) 6P			
**********					
*	1-671-559-11	INLET BOARD			
		**********			
		< CAPACITOR >			
C906	1-104-665-11	ELECT	100uF	20%	16V
C907	1-162-839-11	CERAMIC	0.01uF	10%	16V
C908	1-104-666-11	ELECT	220uF	20%	10V
		< DIODE >			
D908	8-719-991-33	DIODE 1SS133T-77			
D909	8-719-991-33	DIODE 1SS133T-77			
D910	8-719-991-33	DIODE 1SS133T-77			
D911	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D912	8-719-109-92	DIODE RD6.2ES-B1			
D913	8-719-991-33	DIODE 1SS133T-77			
D914	8-719-991-33	DIODE 1SS133T-77			
D915	8-719-991-33	DIODE 1SS133T-77			
D916	8-719-991-33	DIODE 1SS133T-77			
		< JACK >			
⚠J901	1-526-838-11	INLET, AC 2P (~ AC IN)			
		< TRANSISTOR >			
Q901	8-729-037-02	TRANSISTOR KTA1266Y-AT			
Q902	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q903	8-729-037-02	TRANSISTOR KTA1266Y-AT			
Q904	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q905	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q906	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q907	8-729-036-77	TRANSISTOR KRC107M			
		< RESISTOR >			
R901	1-249-441-11	CARBON	100K	5%	1/4W
R902	1-249-429-11	CARBON	10K	5%	1/4W
R903	1-249-441-11	CARBON	100K	5%	1/4W
R904	1-249-429-11	CARBON	10K	5%	1/4W
R905	1-249-429-11	CARBON	10K	5%	1/4W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-249-417-11	CARBON	1K	5%	1/4W
R908	1-249-429-11	CARBON	10K	5%	1/4W
R909	1-249-429-11	CARBON	10K	5%	1/4W
R910	1-249-429-11	CARBON	10K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R911	1-249-417-11	CARBON	1K	5%	1/4W
R912	1-249-429-11	CARBON	10K	5%	1/4W
R913	1-249-425-11	CARBON	4.7K	5%	1/4W
R914	1-249-417-11	CARBON	1K	5%	1/4W
**********					
*	1-671-555-11	LAMP BOARD			
		**********			
PL801	1-517-487-41	LAMP, PILOT (LCD BACK-LIGHT)			
PL802	1-517-487-41	LAMP, PILOT (LCD BACK-LIGHT)			
PL803	1-517-487-41	LAMP, PILOT (LCD BACK-LIGHT)			
**********					
*	A-3321-808-A	LCD BOARD, COMPLETE			
		**********			
	1-783-993-12	WIRE, PARALLEL (FFC) (30 CORE)			
	1-783-994-11	WIRE, PARALLEL (FFC) (13 CORE)			
	3-028-617-01	HOLDER, LCD			
	3-028-618-02	ILLUMINATOR			
	3-028-649-01	PAPER, SHIELD			
		< CONNECTOR >			
CN802	1-563-633-11	HOUSING, CONNECTOR 30P			
CN804	1-691-072-11	HOUSING, CONNECTOR 13P			
		< DIODE >			
D811	8-719-059-97	LED L-34HD (OPR/BATT)			
		< IC >			
IC802	8-749-014-66	IC NJL64H400A			
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-803-232-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< RESISTOR >			
R502	1-249-425-11	CARBON	4.7K	5%	1/4W
R504	1-249-418-11	CARBON	1.2K	5%	1/4W
R505	1-249-420-11	CARBON	1.8K	5%	1/4W
R862	1-249-425-11	CARBON	4.7K	5%	1/4W
R863	1-249-415-11	CARBON	680	5%	1/4W
R864	1-249-416-11	CARBON	820	5%	1/4W
R865	1-249-418-11	CARBON	1.2K	5%	1/4W
R866	1-249-420-11	CARBON	1.8K	5%	1/4W
R867	1-247-843-11	CARBON	3.3K	5%	1/4W
R869	1-249-427-11	CARBON	6.8K	5%	1/4W
R870	1-249-432-11	CARBON	18K	5%	1/4W
R871	1-249-425-11	CARBON	4.7K	5%	1/4W
R872	1-249-415-11	CARBON	680	5%	1/4W
R873	1-249-416-11	CARBON	820	5%	1/4W
R874	1-249-425-11	CARBON	4.7K	5%	1/4W
R875	1-249-420-11	CARBON	1.8K	5%	1/4W
R876	1-247-843-11	CARBON	3.3K	5%	1/4W
R877	1-249-427-11	CARBON	6.8K	5%	1/4W
R879	1-249-425-11	CARBON	4.7K	5%	1/4W
R880	1-249-415-11	CARBON	680	5%	1/4W
R881	1-249-416-11	CARBON	820	5%	1/4W
R882	1-249-418-11	CARBON	1.2K	5%	1/4W
R883	1-249-427-11	CARBON	6.8K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R884	1-249-432-11	CARBON	18K	5%	1/4W
R885	1-249-415-11	CARBON	680	5%	1/4W
R886	1-247-818-91	CARBON	300	5%	1/4W
R893	1-247-843-11	CARBON	3.3K	5%	1/4W
		< SWITCH >			
S809	1-762-798-11	SWITCH, KEYBOARD (EDIT)			
S810	1-762-798-11	SWITCH, KEYBOARD (MEGA BASS)			
S811	1-762-798-11	SWITCH, KEYBOARD (SOUND)			
S812	1-762-798-11	SWITCH, KEYBOARD (CANCEL)			
S813	1-762-798-11	SWITCH, KEYBOARD (DISPLAY)			
S814	1-762-798-11	SWITCH, KEYBOARD (VOL -)			
S815	1-762-798-11	SWITCH, KEYBOARD (VOL +)			
S816	1-762-798-11	SWITCH, KEYBOARD (STANDBY)			
S817	1-762-798-11	SWITCH, KEYBOARD (SLEEP)			
S818	1-762-798-11	SWITCH, KEYBOARD (OPERATE)			
S819	1-762-798-11	SWITCH, KEYBOARD (MD (LINE))			
S820	1-762-798-11	SWITCH, KEYBOARD (RADIO BAND)			
S821	1-762-798-11	SWITCH, KEYBOARD (CLOCK)			
S822	1-762-798-11	SWITCH, KEYBOARD (TIMER)			
S823	1-762-798-11	SWITCH, KEYBOARD (TUNING/TIME SET -)			
S824	1-762-798-11	SWITCH, KEYBOARD (TUNING/TIME SET +)			
S825	1-762-798-11	SWITCH, KEYBOARD (ENTER/MEMORY CHECK)			
S826	1-762-798-11	SWITCH, KEYBOARD (PRESET +)			
S832	1-762-798-11	SWITCH, KEYBOARD (AUTO PRESET)			
S833	1-762-798-11	SWITCH, KEYBOARD (MODE MONO/ST ISS)			
S834	1-762-798-11	SWITCH, KEYBOARD (PRESET -)			
**********					
*	1-671-556-11	LINE BOARD			
		**********			
		< CAPACITOR >			
C401	1-162-851-11	CERAMIC	0.1uF	10%	16V
C402	1-124-907-11	ELECT	10uF	20%	50V
C403	1-162-282-31	CERAMIC	100PF	10%	50V
C404	1-162-282-31	CERAMIC	100PF	10%	50V
C405	1-162-282-31	CERAMIC	100PF	10%	50V
C406	1-162-282-31	CERAMIC	100PF	10%	50V
		< CONNECTOR >			
* CN401	1-564-506-11	PLUG, CONNECTOR 3P			
* CN402	1-564-508-11	PLUG, CONNECTOR 5P			
		< IC >			
IC401	8-749-921-12	IC GP1F32T (OPTICAL DIGITAL OUT (CD))			
		< JACK >			
J401	1-566-891-21	JACK (LINE IN)			
J402	1-566-891-21	JACK (LINE OUT)			
**********					

LOADING MAIN

Ref. No.	Part No.	Description			Remark
*	1-667-045-11	LOADING BOARD			
		**********			
		< CAPACITOR >			
C790	1-104-664-11	ELECT	47uF	20%	25V
		< CONNECTOR >			
* CN781	1-580-923-11	HOUSING, CONNECTOR 2P			
* CN790	1-580-926-11	HOUSING, CONNECTOR 5P			
		< DIODE >			
D790	8-719-970-02	DIODE 1SR139-400			
		< IC >			
IC790	8-759-501-73	IC BA6418N			
		< COIL >			
L790	1-412-852-11	INDUCTOR	47uH		
		< RESISTOR >			
R790	1-247-847-31	CARBON	4.7K	5%	1/4W
		< SWITCH >			
S790	1-762-951-11	SWITCH, PUSH (CLOSE)			
S791	1-762-951-11	SWITCH, PUSH (OPEN)			
**********					
*	A-3321-813-A	MAIN BOARD, COMPLETE			
		**********			
	7-685-646-79	SCREW +BVTP	3X8 TYPE2 N-S		
		< CAPACITOR >			
C101	1-126-963-11	ELECT	4.7uF	20%	50V
C102	1-162-301-11	CERAMIC	0.0015uF	20%	16V
C103	1-104-664-11	ELECT	47uF	20%	10V
C104	1-161-020-11	CERAMIC	0.039uF	10%	16V
C105	1-124-907-11	ELECT	10uF	20%	50V
C106	1-162-301-11	CERAMIC	0.0015uF	30%	16V
C107	1-124-902-00	ELECT	0.47uF	20%	50V
C108	1-126-963-11	ELECT	4.7uF	20%	50V
C109	1-124-907-11	ELECT	10uF	20%	50V
C110	1-162-282-31	CERAMIC	100PF	10%	50V
C111	1-126-963-11	ELECT	4.7uF	20%	50V
C112	1-124-903-11	ELECT	1uF	20%	50V
C113	1-162-286-21	CERAMIC	220PF	10%	50V
C114	1-162-282-31	CERAMIC	100PF	10%	50V
C115	1-124-903-11	ELECT	1uF	20%	50V
C116	1-124-903-11	ELECT	1uF	20%	50V
C117	1-162-849-11	CERAMIC	0.068uF	10%	16V
C118	1-162-849-11	CERAMIC	0.068uF	10%	16V
C119	1-162-837-11	CERAMIC	0.0068uF	10%	16V
C120	1-104-664-11	ELECT	47uF	20%	10V
C121	1-124-443-00	ELECT	100uF	20%	10V
C122	1-136-165-00	FILM	0.1uF	5%	50V
C123	1-126-927-11	ELECT	2200uF	20%	10V
C124	1-162-843-11	CERAMIC	0.022uF	10%	16V

Ref. No.	Part No.	Description			Remark
C125	1-162-282-31	CERAMIC	100PF	10%	50V
C126	1-162-282-31	CERAMIC	100PF	10%	50V
C127	1-162-301-11	CERAMIC	0.0015uF	30%	16V
C201	1-126-963-11	ELECT	4.7uF	20%	50V
C202	1-162-301-11	CERAMIC	0.0015uF	20%	16V
C203	1-104-664-11	ELECT	47uF	20%	10V
C204	1-161-020-11	CERAMIC	0.039uF	10%	16V
C205	1-124-907-11	ELECT	10uF	20%	50V
C206	1-162-301-11	CERAMIC	0.0015uF	30%	16V
C207	1-124-902-00	ELECT	0.47uF	20%	50V
C208	1-126-963-11	ELECT	4.7uF	20%	50V
C209	1-124-907-11	ELECT	10uF	20%	50V
C210	1-162-282-31	CERAMIC	100PF	10%	50V
C211	1-126-963-11	ELECT	4.7uF	20%	50V
C212	1-124-903-11	ELECT	1uF	20%	50V
C213	1-162-286-21	CERAMIC	220PF	10%	50V
C214	1-162-282-31	CERAMIC	100PF	10%	50V
C215	1-124-903-11	ELECT	1uF	20%	50V
C216	1-124-903-11	ELECT	1uF	20%	50V
C217	1-162-849-11	CERAMIC	0.068uF	10%	16V
C218	1-162-849-11	CERAMIC	0.068uF	10%	16V
C219	1-162-837-11	CERAMIC	0.0068uF	10%	16V
C220	1-104-664-11	ELECT	47uF	20%	10V
C221	1-124-443-00	ELECT	100uF	20%	10V
C222	1-136-165-00	FILM	0.1uF	5%	50V
C223	1-126-927-11	ELECT	2200uF	20%	10V
C224	1-162-843-11	CERAMIC	0.022uF	10%	16V
C225	1-162-282-31	CERAMIC	100PF	10%	50V
C226	1-162-282-31	CERAMIC	100PF	10%	50V
C227	1-162-301-11	CERAMIC	0.0015uF	30%	16V
C300	1-128-548-11	ELECT	4700uF	20%	25V
C301	1-104-664-11	ELECT	47uF	20%	10V
C302	1-104-666-11	ELECT	220uF	20%	10V
C303	1-104-664-11	ELECT	47uF	20%	10V
C304	1-161-020-11	CERAMIC	0.039uF	10%	16V
C305	1-124-907-11	ELECT	10uF	20%	50V
C306	1-104-664-11	ELECT	47uF	20%	10V
C308	1-130-481-00	MYLAR	0.0068uF	5%	50V
C309	1-130-479-00	MYLAR	0.0047uF	5%	50V
C310	1-130-471-00	MYLAR	0.001uF	5%	50V
C311	1-130-471-00	MYLAR	0.001uF	5%	50V
C312	1-104-664-11	ELECT	47uF	20%	10V
C313	1-126-963-11	ELECT	4.7uF	20%	50V
C314	1-162-306-11	CERAMIC	0.01uF	30%	16V
C315	1-130-481-00	MYLAR	0.0068uF	5%	50V
C316	1-104-664-11	ELECT	47uF	20%	10V
C317	1-124-443-00	ELECT	100uF	20%	10V
C319	1-124-443-00	ELECT	100uF	20%	10V
C320	1-104-666-11	ELECT	220uF	20%	10V
C321	1-126-963-11	ELECT	4.7uF	20%	50V
C322	1-126-233-11	ELECT	22uF	20%	50V
C323	1-162-851-11	CERAMIC	0.1uF	10%	16V
C324	1-126-963-11	ELECT	4.7uF	20%	50V
C325	1-124-443-00	ELECT	100uF	20%	10V
C326	1-104-664-11	ELECT	47uF	20%	10V
C327	1-162-843-11	CERAMIC	0.022uF	10%	16V
C328	1-124-478-11	ELECT	100uF	20%	25V

Ref. No.	Part No.	Description			Remark
C329	1-130-499-00	MYLAR	0.22uF	5%	50V
C330	1-104-664-11	ELECT	47uF	20%	10V
C331	1-162-286-21	CERAMIC	220PF	10%	50V
C332	1-162-286-21	CERAMIC	220PF	10%	50V
C333	1-162-292-31	CERAMIC	680PF	10%	50V
C334	1-104-666-11	ELECT	220uF	20%	10V
C335	1-124-902-00	ELECT	0.47uF	20%	50V
C338	1-126-963-11	ELECT	4.7uF	20%	50V
C339	1-126-963-11	ELECT	4.7uF	20%	50V
C340	1-162-292-31	CERAMIC	680PF	10%	50V
C341	1-162-843-11	CERAMIC	0.022uF	10%	16V
C342	1-124-252-00	ELECT	0.33uF	20%	50V
C343	1-126-963-11	ELECT	4.7uF	20%	50V
C344	1-126-962-11	ELECT	3.3uF	20%	50V
C345	1-126-961-11	ELECT	2.2uF	20%	50V
C346	1-124-907-11	ELECT	10uF	20%	50V
C361	1-124-443-00	ELECT	100uF	20%	10V
C362	1-104-664-11	ELECT	47uF	20%	10V
C363	1-162-843-11	CERAMIC	0.022uF	10%	16V
C364	1-162-843-11	CERAMIC	0.022uF	10%	16V
C365	1-124-443-00	ELECT	100uF	20%	10V
C366	1-104-666-11	ELECT	220uF	20%	10V
C367	1-162-843-11	CERAMIC	0.022uF	10%	16V
C368	1-162-843-11	CERAMIC	0.022uF	10%	16V
C369	1-162-851-11	CERAMIC	0.1uF	10%	16V
C371	1-162-843-11	CERAMIC	0.022uF	10%	16V
C372	1-162-843-11	CERAMIC	0.022uF	10%	16V
		< CONNECTOR >			
* CN301	1-580-158-11	PIN, CONNECTOR (PC BOARD) 6P			
CN302	1-691-079-31	HOUSING, CONNECTOR 20P			
CN303	1-691-071-31	HOUSING, CONNECTOR 12P			
* CN304	1-564-507-11	PLUG, CONNECTOR 4P			
CN305	1-691-042-31	HOUSING, CONNECTOR 10P			
* CN306	1-564-508-11	PLUG, CONNECTOR 5P			
		< DIODE >			
D301	8-719-991-33	DIODE 1SS133T-77			
D302	8-719-991-33	DIODE 1SS133T-77			
D303	8-719-991-33	DIODE 1SS133T-77			
D304	8-719-991-33	DIODE 1SS133T-77			
D305	8-719-991-33	DIODE 1SS133T-77			
D307	8-719-991-33	DIODE 1SS133T-77			
D308	8-719-991-33	DIODE 1SS133T-77			
D309	8-719-991-33	DIODE 1SS133T-77			
D310	8-719-991-33	DIODE 1SS133T-77			
D311	8-719-991-33	DIODE 1SS133T-77			
D312	8-719-991-33	DIODE 1SS133T-77			
D313	8-719-991-33	DIODE 1SS133T-77			
D361	8-719-109-88	DIODE RD5.6ES-B1			
D362	8-719-110-09	DIODE RD8.2ES-B3			
D364	8-719-109-97	DIODE RD6.8ES-B2			
D365	8-719-991-33	DIODE 1SS133T-77			
D366	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC301	8-759-264-71	IC TA2068N			

Ref. No.	Part No.	Description	Remark
IC302	8-759-432-41	IC BH3854AS	
IC303	8-759-634-51	IC M5218AP	
IC304	8-759-426-51	IC BA5417	
IC305	8-759-800-71	IC LA2010	
IC306	8-759-479-70	IC S-81250SGY-B	
IC307	8-759-564-82	IC BA09ST-V5	
		< COIL >	
L101	1-414-142-11	INDUCTOR 1uH	
L102	1-414-142-11	INDUCTOR 1uH	
L201	1-414-142-11	INDUCTOR 1uH	
L202	1-414-142-11	INDUCTOR 1uH	
L301	1-410-509-11	INDUCTOR 10uH	
L302	1-414-142-11	INDUCTOR 1uH	
L303	1-414-142-11	INDUCTOR 1uH	
		< TRANSISTOR >	
Q101	8-729-036-80	TRANSISTOR KRC110M	
Q102	8-729-036-80	TRANSISTOR KRC110M	
Q103	8-729-905-50	TRANSISTOR DTC343TS	
Q104	8-729-905-50	TRANSISTOR DTC343TS	
Q105	8-729-036-77	TRANSISTOR KRC107M	
Q106	8-729-905-50	TRANSISTOR DTC343TS	
Q201	8-729-036-80	TRANSISTOR KRC110M	
Q202	8-729-036-80	TRANSISTOR KRC110M	
Q203	8-729-905-50	TRANSISTOR DTC343TS	
Q204	8-729-905-50	TRANSISTOR DTC343TS	
Q205	8-729-036-77	TRANSISTOR KRC107M	
Q206	8-729-905-50	TRANSISTOR DTC343TS	
Q301	8-729-925-12	TRANSISTOR 2SC1740SLN	
Q302	8-729-925-12	TRANSISTOR 2SC1740SLN	
Q303	8-729-036-86	TRANSISTOR KTC3203Y-AT	
Q304	8-729-036-86	TRANSISTOR KTC3203Y-AT	
Q305	8-729-037-02	TRANSISTOR KTA1266Y-AT	
Q306	8-729-036-77	TRANSISTOR KRC107M	
Q307	8-729-036-77	TRANSISTOR KRC107M	
Q308	8-729-036-86	TRANSISTOR KTC3203Y-AT	
Q309	8-729-037-02	TRANSISTOR KTA1266Y-AT	
Q310	8-729-036-77	TRANSISTOR KRC107M	
Q311	8-729-037-34	TRANSISTOR KRA107M	
Q312	8-729-036-77	TRANSISTOR KRC107M	
Q313	8-729-037-34	TRANSISTOR KRA107M	
Q314	8-729-037-34	TRANSISTOR KRA107M	
Q315	8-729-036-89	TRANSISTOR KTC3198GR-AT	
Q316	8-729-036-77	TRANSISTOR KRC107M	
Q318	8-729-036-89	TRANSISTOR KTC3198GR-AT	
Q319	8-729-036-77	TRANSISTOR KRC107M	
Q320	8-729-920-94	TRANSISTOR DTA123YS	
Q321	8-729-037-34	TRANSISTOR KRA107M	
Q341	8-729-036-77	TRANSISTOR KRC107M	
Q361	8-729-036-86	TRANSISTOR KTC3203Y-AT	
Q362	8-729-209-15	TRANSISTOR 2SD2012	
Q363	8-729-209-15	TRANSISTOR 2SD2012	
Q365	8-729-037-29	TRANSISTOR KRA102M	
Q366	8-729-036-89	TRANSISTOR KTC3198GR-AT	

MAIN

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-249-419-11	CARBON	1.5K	5%	1/4W
R102	1-249-430-11	CARBON	12K	5%	1/4W
R103	1-249-403-11	CARBON	68	5%	1/4W
R104	1-249-440-11	CARBON	82K	5%	1/4W
R105	1-247-843-11	CARBON	3.3K	5%	1/4W
R106	1-249-429-11	CARBON	10K	5%	1/4W
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-429-11	CARBON	10K	5%	1/4W
R109	1-249-437-11	CARBON	47K	5%	1/4W
R110	1-249-429-11	CARBON	10K	5%	1/4W
R111	1-247-843-11	CARBON	3.3K	5%	1/4W
R112	1-249-429-11	CARBON	10K	5%	1/4W
R113	1-249-429-11	CARBON	10K	5%	1/4W
R114	1-249-417-11	CARBON	1K	5%	1/4W
R115	1-249-437-11	CARBON	47K	5%	1/4W
R116	1-247-843-11	CARBON	3.3K	5%	1/4W
R117	1-249-431-11	CARBON	15K	5%	1/4W
R118	1-249-426-11	CARBON	5.6K	5%	1/4W
R119	1-249-417-11	CARBON	1K	5%	1/4W
R120	1-249-420-11	CARBON	1.8K	5%	1/4W
R121	1-249-431-11	CARBON	15K	5%	1/4W
R122	1-249-425-11	CARBON	4.7K	5%	1/4W
R123	1-249-410-11	CARBON	270	5%	1/4W
R124	1-249-429-11	CARBON	10K	5%	1/4W
R125	1-249-385-11	CARBON	2.2	5%	1/6W
R126	1-249-421-11	CARBON	2.2K	5%	1/4W
R127	1-247-843-11	CARBON	3.3K	5%	1/4W
R140	1-249-429-11	CARBON	10K	5%	1/4W
R201	1-249-419-11	CARBON	1.5K	5%	1/4W
R202	1-249-430-11	CARBON	12K	5%	1/4W
R203	1-249-403-11	CARBON	68	5%	1/4W
R204	1-249-440-11	CARBON	82K	5%	1/4W
R205	1-247-843-11	CARBON	3.3K	5%	1/4W
R206	1-249-429-11	CARBON	10K	5%	1/4W
R207	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-429-11	CARBON	10K	5%	1/4W
R209	1-249-437-11	CARBON	47K	5%	1/4W
R210	1-249-429-11	CARBON	10K	5%	1/4W
R211	1-247-843-11	CARBON	3.3K	5%	1/4W
R212	1-249-429-11	CARBON	10K	5%	1/4W
R213	1-249-429-11	CARBON	10K	5%	1/4W
R214	1-249-417-11	CARBON	1K	5%	1/4W
R215	1-249-437-11	CARBON	47K	5%	1/4W
R216	1-247-843-11	CARBON	3.3K	5%	1/4W
R217	1-249-431-11	CARBON	15K	5%	1/4W
R218	1-249-426-11	CARBON	5.6K	5%	1/4W
R219	1-249-417-11	CARBON	1K	5%	1/4W
R220	1-249-420-11	CARBON	1.8K	5%	1/4W
R221	1-249-431-11	CARBON	15K	5%	1/4W
R222	1-249-425-11	CARBON	4.7K	5%	1/4W
R223	1-249-410-11	CARBON	270	5%	1/4W
R224	1-249-429-11	CARBON	10K	5%	1/4W
R225	1-249-385-11	CARBON	2.2	5%	1/6W
R226	1-249-421-11	CARBON	2.2K	5%	1/4W
R227	1-247-843-11	CARBON	3.3K	5%	1/4W
R240	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R301	1-247-791-91	CARBON	22	5%	1/4W
R302	1-247-903-00	CARBON	1M	5%	1/4W
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-429-11	CARBON	10K	5%	1/4W
R305	1-247-843-11	CARBON	3.3K	5%	1/4W
R306	1-247-843-11	CARBON	3.3K	5%	1/4W
R307	1-249-419-11	CARBON	1.5K	5%	1/4W
R308	1-249-419-11	CARBON	1.5K	5%	1/4W
R309	1-247-843-11	CARBON	3.3K	5%	1/4W
R310	1-249-441-11	CARBON	100K	5%	1/4W
R311	1-249-401-11	CARBON	47	5%	1/4W
R312	1-247-791-91	CARBON	22	5%	1/4W
R313	1-249-425-11	CARBON	4.7K	5%	1/4W
R314	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-249-393-11	CARBON	10	5%	1/4W
R316	1-249-425-11	CARBON	4.7K	5%	1/4W
R317	1-249-437-11	CARBON	47K	5%	1/4W
R318	1-249-401-11	CARBON	47	5%	1/4W
R319	1-249-429-11	CARBON	10K	5%	1/4W
R320	1-249-429-11	CARBON	10K	5%	1/4W
R321	1-249-401-11	CARBON	47	5%	1/4W
R322	1-247-903-00	CARBON	1M	5%	1/4W
R323	1-247-903-00	CARBON	1M	5%	1/4W
R324	1-249-425-11	CARBON	4.7K	5%	1/4W
R325	1-249-425-11	CARBON	4.7K	5%	1/4W
R326	1-249-425-11	CARBON	4.7K	5%	1/4W
R327	1-249-432-11	CARBON	18K	5%	1/4W
R328	1-247-843-11	CARBON	3.3K	5%	1/4W
R329	1-249-417-11	CARBON	1K	5%	1/4W
R330	1-249-441-11	CARBON	100K	5%	1/4W
R331	1-249-429-11	CARBON	10K	5%	1/4W
R332	1-249-413-11	CARBON	470	5%	1/4W
R333	1-249-425-11	CARBON	4.7K	5%	1/4W
R334	1-249-437-11	CARBON	47K	5%	1/4W
R335	1-247-863-91	CARBON	22K	5%	1/4W
R336	1-249-429-11	CARBON	10K	5%	1/4W
R337	1-249-429-11	CARBON	10K	5%	1/4W
R338	1-249-429-11	CARBON	10K	5%	1/4W
R339	1-247-903-00	CARBON	1M	5%	1/4W
R340	1-249-429-11	CARBON	10K	5%	1/4W
R341	1-249-426-11	CARBON	5.6K	5%	1/4W
R342	1-247-891-00	CARBON	330K	5%	1/4W
R343	1-249-441-11	CARBON	100K	5%	1/4W
R344	1-249-417-11	CARBON	1K	5%	1/4W
R345	1-249-401-11	CARBON	47	5%	1/4W
R346	1-249-417-11	CARBON	1K	5%	1/4W
R347	1-249-417-11	CARBON	1K	5%	1/4W
R363	1-249-407-11	CARBON	150	5%	1/4W
R364	1-249-421-11	CARBON	2.2K	5%	1/4W
R365	1-247-815-91	CARBON	220	5%	1/4W
R367	1-247-815-91	CARBON	220	5%	1/4W
		< TRANSFORMER >			
T301	1-433-372-11	TRANSFORMER, BIAS OSCILLATION			

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Ref. No.	Part No.	Description			Remark
*	1-667-046-11	PICK-UP RELAY BOARD			
		**********			
		< CONNECTOR >			
CN702	1-565-874-31	PIN, CONNECTOR (PC BOARD) 2P			
CN703	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P			
CN704	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P			
CN706	1-784-213-11	CONNECTOR, FFC/FPC 14P			
CN707	1-569-309-11	SOCKET, CONNECTOR (L TYRE) 21P			
**********					
*	1-671-558-11	POWER BOARD			
		**********			
	1-533-233-31	HOLDER, FUSE			
		< CAPACITOR >			
C901	1-101-005-00	CERAMIC	22000PF		50V
C902	1-101-005-00	CERAMIC	22000PF		50V
C903	1-101-005-00	CERAMIC	22000PF		50V
C904	1-101-005-00	CERAMIC	22000PF		50V
C905	1-136-165-00	FILM	0.1uF	5%	50V
		< CONNECTOR >			
* CN901	1-564-509-11	PLUG, CONNECTOR 6P			
* CN902	1-564-506-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D901	8-719-046-07	DIODE 2A02M			
D902	8-719-046-07	DIODE 2A02M			
D903	8-719-046-07	DIODE 2A02M			
D904	8-719-046-07	DIODE 2A02M			
D905	8-719-991-33	DIODE 1SS133T-77			
D906	8-719-991-33	DIODE 1SS133T-77			
D907	8-719-981-95	DIODE MTZJ-2.7B			
		< FUSE >			
⚠F901	1-532-505-31	FUSE, TIME LAG (T5AL/250V)			
		< TRANSFORMER >			
⚠T901	1-433-456-11	TRANSFORMER, POWER			
**********					
*	1-671-550-11	SWITCH (1) BOARD			
		**********			
* CN805	1-564-517-11	PLUG, CONNECTOR 2P			
		< RESISTOR >			
R855	1-249-415-11	CARBON	680	5%	1/4W
R856	1-249-416-11	CARBON	820	5%	1/4W
R857	1-249-418-11	CARBON	1.2K	5%	1/4W
R858	1-249-420-11	CARBON	1.8K	5%	1/4W
R859	1-247-843-11	CARBON	3.3K	5%	1/4W
R860	1-249-427-11	CARBON	6.8K	5%	1/4W
R861	1-249-432-11	CARBON	18K	5%	1/4W

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S801	1-762-798-11	SWITCH, KEYBOARD (►)			
S802	1-762-798-11	SWITCH, KEYBOARD (◄)			
S803	1-762-798-11	SWITCH, KEYBOARD (■)			
S804	1-762-798-11	SWITCH, KEYBOARD (►►)			
S805	1-762-798-11	SWITCH, KEYBOARD (◄◄)			
S806	1-762-798-11	SWITCH, KEYBOARD (●/❚❚)			
S807	1-762-798-11	SWITCH, KEYBOARD (DIR MODE)			
S808	1-762-798-11	SWITCH, KEYBOARD (COUNTER RESET)			
**********					
*	1-671-551-11	SWITCH (2) BOARD			
		**********			
	3-028-615-01	BRACKET, CD BUTTON			
	3-031-094-03	BRACKET (2), CD			
	3-831-441-11	CUSHION (B) AEP			
	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT			
		< RESISTOR >			
R503	1-249-415-11	CARBON	680	5%	1/4W
R888	1-249-416-11	CARBON	820	5%	1/4W
R889	1-249-418-11	CARBON	1.2K	5%	1/4W
R892	1-249-420-11	CARBON	1.8K	5%	1/4W
		< SWITCH >			
S827	1-762-798-11	SWITCH, KEYBOARD (CD OPEN/CLOSE ⏏)			
S828	1-762-798-11	SWITCH, KEYBOARD (■)			
S829	1-762-798-11	SWITCH, KEYBOARD (►❚❚)			
S830	1-762-798-11	SWITCH, KEYBOARD (►►❙)			
S831	1-762-798-11	SWITCH, KEYBOARD (❙◄◄)			
**********					
	1-673-338-11	TC RF BOARD			
		**********			
		< CONNECTOR >			
CN691	1-580-170-11	PIN, CONNECTOR (PC BOARD) 9P			
		< PHOTO INTERRUPTER >			
PH691	8-729-021-62	PHOTO INTERRUPTER SG-211			
		< RESISTOR >			
R691	1-249-411-11	CARBON	330	5%	1/4W
R692	1-247-838-00	CARBON	2K	5%	1/4W
		< VARIABLE RESISTOR >			
RV691	1-228-992-11	VARIABLE RESISTOR (TAPE SPEED)			
		< SWITCH >			
S696	1-771-661-11	SWITCH, LEAF (HEAD POSITION)			
**********					
*	A-3321-811-A	TUNER BOARD, COMPLETE			
		**********			
FH1	1-533-233-31	HOLDER, FUSE			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

TUNER

Ref. No.	Part No.	Description				Remark
	1-783-990-11	WIRE, PARALLEL (FFC) (10 CORE)				
		< CAPACITOR >				
C1	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C2	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C3	1-102-960-00	CERAMIC	24PF	5%	50V	
C4	1-162-203-31	CERAMIC	15PF	5%	50V	
C5	1-162-843-11	CERAMIC	0.022uF	10%	16V	
C6	1-162-843-11	CERAMIC	0.022uF	10%	16V	
C7	1-161-055-00	CERAMIC	0.022uF	10%	50V	
C8	1-162-195-31	CERAMIC	4.7PF	10%	50V	
C9	1-102-973-00	CERAMIC	100PF	5%	50V	
C10	1-102-823-11	CERAMIC	430PF	5%	50V	
C11	1-162-199-31	CERAMIC	10PF	5%	50V	
C12	1-136-013-11	FILM	360PF	5%	50V	
C14	1-162-851-11	CERAMIC	0.1uF		16V	
C15	1-161-494-00	CERAMIC	0.022uF		25V	
C16	1-126-963-11	ELECT	4.7uF	20%	50V	
C17	1-162-288-31	CERAMIC	330PF	10%	50V	
C18	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C19	1-124-907-11	ELECT	10uF	20%	50V	
C20	1-162-849-11	CERAMIC	0.068uF	10%	16V	
C21	1-162-850-11	CERAMIC	0.082uF	10%	16V	
C22	1-162-850-11	CERAMIC	0.082uF	10%	16V	
C23	1-161-053-00	CERAMIC	0.015uF	10%	50V	
C24	1-161-053-00	CERAMIC	0.015uF	10%	50V	
C25	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C26	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C27	1-124-443-00	ELECT	100uF	20%	10V	
C28	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C30	1-162-286-21	CERAMIC	220PF	10%	50V	
C31	1-162-199-31	CERAMIC	10PF	5%	50V	
C32	1-162-199-31	CERAMIC	10PF	5%	50V	
C33	1-136-171-00	FILM	0.33uF	5%	50V	
C34	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C35	1-126-941-11	ELECT	470uF	20%	6.3V	
C36	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C37	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C38	1-162-282-31	CERAMIC	100PF	10%	50V	
C39	1-162-282-31	CERAMIC	100PF	10%	50V	
C40	1-162-282-31	CERAMIC	100PF	10%	50V	
C41	1-162-282-31	CERAMIC	100PF	10%	50V	
C42	1-130-483-00	MYLAR	0.01uF	5%	50V	
C44	1-126-963-11	ELECT	4.7uF	20%	50V	
C45	1-126-963-11	ELECT	4.7uF	20%	50V	
C46	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C52	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C53	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C55	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C56	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C67	1-162-195-31	CERAMIC	4.7PF	10%	50V	
C68	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C69	1-162-215-31	CERAMIC	47PF	5%	50V	
C71	1-104-666-11	ELECT	220uF	20%	10V	
C72	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C81	1-162-306-11	CERAMIC	0.01uF	30%	16V	

Ref. No.	Part No.	Description	Remark
		< FILTER >	
CF1	1-760-468-11	FILTER, CERAMIC	
CF2	1-760-468-11	FILTER, CERAMIC	
CF3	1-760-468-11	FILTER, CERAMIC	
CF4	1-579-762-11	VIBRATOR, CERAMIC	
		< COMPOSITION CIRCUIT BLOCK >	
CFT1	1-239-173-11	ENCAPSULATED COMPONENT (MW/LW IF)	
		< CONNECTOR >	
CN1	1-695-371-31	CONNECTOR, FFC/FPC 10P	
CN2	1-536-354-00	POST PIN	
		< TRIMMER >	
CT1	1-141-411-11	CAP, ADJ 20PF (FM TRACKING)	
CT2	1-141-411-11	CAP, ADJ 20PF (MW FREQUENCY COVERAGE)	
CT3	1-141-459-11	CAP, TRIMMER (SEAL TYPE) 45PF (LW FREQUENCY COVERAGE)	
CT4	1-141-486-11	CAP, ADJ 10PF (MW TRACKING)	
CT5	1-141-411-11	CAP, ADJ 20PF (LW TRACKING)	
		< DIODE >	
D1	8-719-991-33	DIODE 1SS133T-77	
D2	8-719-991-33	DIODE 1SS133T-77	
D3	8-719-050-72	DIODE KV1370NT	
D4	8-719-050-72	DIODE KV1370NT	
D5	8-719-050-69	DIODE KV1520N	
		< FILTER >	
FL1	1-236-711-21	FILTER, BAND PASS	
		< IC >	
IC1	8-759-386-02	IC TA2008AN	
IC2	8-759-549-57	IC LC72137-D	
		< COIL >	
L1	1-409-905-31	COIL, FM RF (FM TRACKING)	
L2	1-409-904-31	COIL, FM OSC (FM FREQUENCY COVERAGE)	
L3	1-501-752-11	ANTENNA, FERRITE-ROD (MW/LW) (MW/LW TRACKING)	
L4	1-411-199-11	COIL, MW/LW OSC (MW FREQUENCY COVERAGE)	
L11	1-410-517-11	INDUCTOR 47uH	
		< TRANSISTOR >	
Q1	8-729-119-32	TRANSISTOR 2SK193	
Q2	8-729-922-66	TRANSISTOR 2SC2410SN	
Q3	8-729-922-66	TRANSISTOR 2SC2410SN	
Q4	8-729-905-50	TRANSISTOR DTC343TS	
Q5	8-729-178-62	TRANSISTOR 2SC2786-L	
Q6	8-729-922-66	TRANSISTOR 2SC2410SN	
Q9	8-729-036-77	TRANSISTOR KRC107M	
Q10	8-729-036-77	TRANSISTOR KRC107M	
Q11	8-729-036-77	TRANSISTOR KRC107M	
Q12	8-729-036-77	TRANSISTOR KRC107M	
Q15	8-729-036-77	TRANSISTOR KRC107M	
Q16	8-729-036-77	TRANSISTOR KRC107M	

Ref. No.	Part No.	Description				Remark
Q18	8-729-036-77	TRANSISTOR	KRC107M			
Q21	8-729-037-29	TRANSISTOR	KRA102M			
Q22	8-729-037-29	TRANSISTOR	KRA102M			
Q23	8-729-922-66	TRANSISTOR	2SC2410SN			
		< RESISTOR >				
R1	1-247-887-00	CARBON	220K	5%	1/4W	
R2	1-249-441-11	CARBON	100K	5%	1/4W	
R3	1-249-431-11	CARBON	15K	5%	1/4W	
R4	1-249-413-11	CARBON	470	5%	1/4W	
R5	1-249-417-11	CARBON	1K	5%	1/4W	
R6	1-249-425-11	CARBON	4.7K	5%	1/4W	
R7	1-249-425-11	CARBON	4.7K	5%	1/4W	
R9	1-249-425-11	CARBON	4.7K	5%	1/4W	
R10	1-249-429-11	CARBON	10K	5%	1/4W	
R11	1-247-887-00	CARBON	220K	5%	1/4W	
R12	1-249-425-11	CARBON	4.7K	5%	1/4W	
R13	1-247-815-91	CARBON	220	5%	1/4W	
R14	1-249-427-11	CARBON	6.8K	5%	1/4W	
R16	1-249-417-11	CARBON	1K	5%	1/4W	
R19	1-249-421-11	CARBON	2.2K	5%	1/4W	
R20	1-247-863-91	CARBON	22K	5%	1/4W	
R21	1-249-404-00	CARBON	82	5%	1/4W	
R23	1-249-425-11	CARBON	4.7K	5%	1/4W	
R24	1-249-425-11	CARBON	4.7K	5%	1/4W	
R25	1-249-425-11	CARBON	4.7K	5%	1/4W	
R26	1-249-429-11	CARBON	10K	5%	1/4W	
R27	1-249-429-11	CARBON	10K	5%	1/4W	
R28	1-249-429-11	CARBON	10K	5%	1/4W	
R29	1-249-429-11	CARBON	10K	5%	1/4W	
R30	1-249-427-11	CARBON	6.8K	5%	1/4W	
R31	1-247-843-11	CARBON	3.3K	5%	1/4W	
R32	1-249-416-11	CARBON	820	5%	1/4W	
R34	1-249-429-11	CARBON	10K	5%	1/4W	
R35	1-249-429-11	CARBON	10K	5%	1/4W	
R39	1-249-429-11	CARBON	10K	5%	1/4W	
R40	1-247-807-31	CARBON	100	5%	1/4W	
R44	1-249-429-11	CARBON	10K	5%	1/4W	
R49	1-249-421-11	CARBON	2.2K	5%	1/4W	
R50	1-249-417-11	CARBON	1K	5%	1/4W	
R52	1-249-441-11	CARBON	100K	5%	1/4W	
R53	1-249-441-11	CARBON	100K	5%	1/4W	
R54	1-249-413-11	CARBON	470	5%	1/4W	
R55	1-249-437-11	CARBON	47K	5%	1/4W	
R56	1-249-411-11	CARBON	330	5%	1/4W	
R57	1-247-791-91	CARBON	22	5%	1/4W	
R59	1-249-421-11	CARBON	2.2K	5%	1/4W	
R60	1-249-407-11	CARBON	150	5%	1/4W	
R70	1-247-887-00	CARBON	220K	5%	1/4W	
R71	1-247-815-91	CARBON	220	5%	1/4W	
R72	1-249-417-11	CARBON	1K	5%	1/4W	
R73	1-249-417-11	CARBON	1K	5%	1/4W	
R77	1-249-429-11	CARBON	10K	5%	1/4W	

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X1	1-760-130-11	VIBRATOR, CRYSTAL (75kHz)	
**********			
		MISCELLANEOUS	
		**********	
8	1-533-233-31	HOLDER, FUSE	
103	1-783-993-11	WIRE, PARALLEL (FFC) (30 CORE)	
104	1-783-994-11	WIRE, PARALLEL (FFC) (13 CORE)	
106	1-783-990-11	WIRE, PARALLEL (FFC) (10 CORE)	
108	1-783-991-11	WIRE, PARALLEL (FFC) (12 CORE)	
109	1-783-992-11	WIRE, PARALLEL (FFC) (20 CORE)	
110	1-782-663-11	WIRE (FLAT TYPE) (21CORE)	
303	1-690-530-81	LEAD (WITH CONNECTOR)	
308	1-660-965-11	SLIDE FLEXIBLE BOARD	
⚠309	X-4950-060-1	OPTICAL PICK-UP (DAX01A2 RP)	
ANT1	1-754-055-11	ANTENNA, TELESCOPIC	
⚠F901	1-532-505-31	FUSE, TIME LAG (T5AL/250V)	
HRPE901	1-500-601-11	HEAD, REC/PB (RECORD/PLAYBACK/ERASE)	
LCD801	1-803-232-11	DISPLAY PANEL, LIQUID CRYSTAL	
M691	3-034-599-01	MOTOR ASSY (CAPSTAN/REEL) (INCLUDING PULLEY)	
M790	1-698-999-11	MOTOR, DC (LOADING)	
M801	A-3303-403-A	MOTOR ASSY (SLED) (INCLUDING GEAR)	
M802	A-3303-971-A	MOTOR ASSY, TURNTABLE (SPINDLE)	
PH691	8-729-021-62	PHOTO INTERRUPTOR SG-211	
PM691	1-454-896-11	SOLENOID, PLUNGER	
S696	1-771-661-11	SWITCH, LEAF (HEAD POSITION)	
S801	1-571-099-21	SWITCH (1 KEY) (LIMIT)	
SP101	1-505-742-11	SPEAKER (8cm) (L-CH)	
SP201	1-505-742-11	SPEAKER (8cm) (R-CH)	
⚠T901	1-433-456-11	TRANSFORMER, POWER	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-769-412-13	CORD, POWER	
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
	3-027-153-01	LID, BATTERY CASE (FOR RMT-CD50AD)	
	3-864-496-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (AEP,Tourist,UK)	
	3-864-496-21	MANUAL, INSTRUCTION (FRENCH, GERMAN) (AEP,Tourist)	
	3-864-496-31	MANUAL, INSTRUCTION (DUTCH, PORTUGUESE) (AEP)	
	3-864-496-41	MANUAL, INSTRUCTION (ITALIAN) (IT)	
	3-864-496-51	MANUAL, INSTRUCTION (SWEDISH, FINNISH) (EE, Russia)	
	3-864-496-61	MANUAL, INSTRUCTION (POLISH, CZECH, HUNGARIAN) (EE,Russia)	
	A-3250-874-A	REMOTE COMMANDER (RMT-CD50AD)	
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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-621-773-86	SCREW +B 2.6X4	
#2	7-623-510-01	LUG, 4	
#3	7-682-549-04	SCREW +B 3X10	
#4	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#5	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#7	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#8	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#9	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
#11	7-627-850-17	SCREW +P 1.4X2.5 TYPE3	
#13	7-682-546-09	SCREW +B 3X5	

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